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Installation Design Guide



Daniel Burnham 1907

INSTALLATION DESIGN GUIDE FORT EUSTIS, VIRGINIA

0 9 JUL 1990

Wesley J McMillan LTC, EN	
Director of Engineering and Housing	•
Reviewed and approved for adequacy by Commanding Genera	!
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Samuel N. Wakefield	
MG, U.S. Army	
MG, U.S. Army Commanding	

FOREWORD

TRADOC is raising the standards of excellence for our installations. Commanders of TRADOC installations are directing planning and construction which enhance our ability to attract and retain skilled and motivated people.

This Installation Design Guide is the embodiment of the high standards the Installation Commander and I have approved. These standards and TRADOC Reg 420-15 apply to all design, construction, maintenance, and repair work executed anywhere on the installation. Future commanders will use this guide to build on our momentum and ensure continuity.

By making certain all agencies comply with this common set of high standards, our installations will evolve within a controlled, yet pride inspiring environment. All of the pieces will support the whole rather than being merely stand-alone facilities unrelated to their surroundings. The concept of working together is the very essence of the U.S. Army where teamwork is the key to mission success. You are a key player, and the Installation Commander is the team captain.

Understanding and complying with these standards will ensure the Army's training base engenders individual and collective pride in our soldiers--today and tomorrow. Pride is the fuel of human accomplishment and a combat multiplier.

> JOHN W. EOSS General, U.S. Army

Commanding

DEPARTMENT OF THE ARMY

HEADQUARTERS UNITED STATES ARMY TRAINING AND DOCTRINE COMMAND FORT MONROE, VIRGINIA 23651-5000



REPLY 10 AFTERTION OF

ATEN-FE

19 October 1987

MEMORANDUM FOR: All Who Use These Standards

SUBJECT: TRADOC Installation Design Guides

- 1. TRADOC is raising standards for our installations!
 Commanders of TRADOC installations are directing the design and maintenance processes which destine their installation's ability to attract and retain skilled and motivated personnel.
- 2. This Installation Design Guide is the embodiment of the high standards approved by the Installation Commander and myself. These standards apply to all design, construction and maintenance and repair work being executed anywhere on the installation. Future commanders will use this guide to build on our momentum and ensure continuity.
- 3. By making certain that all agencies comply with this common set of high standards, our installations will evolve within a controlled, yet pride inspiring, environment. All of the pieces will support the whole rather than being merely stand-alone facilities unrelated to their surroundings. The concept of working together is the very essence of the U.S. Army where teamwork is mission essential. Training must take place in an environment which is obviously the product of professional teamwork. You are a key player and the Installation Commander is the team captain.
- 4. Your understanding of and compliance with these standards will ensure that the Army's training base engenders individual and collective pride in today's and tomorrow's soldiers. Pride is the fuel of human accomplishment and a combat multiplier.

M. R. THURMAN General, USA Commanding **Executive Summary**

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- 1. Site Planning
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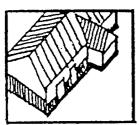
Section 4

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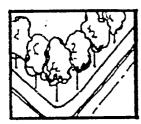
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How to Use this Document

Identify Nature of Proposed Project



Building



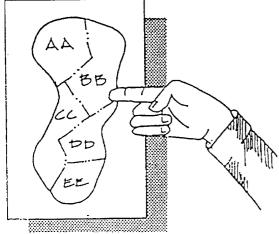
Planting



Maintenance

Etc.

2 Identify Appropriate Visual Zone



Visual Zone Map

Intended Use of the IDG

The Fort Eustis Installation Design Guide (IDG) is intended to be used by persons in the DEH office responsible for preparing requests for proposals, design contracts, construction contracts, or maintenance work orders. this document formulated directives to assist the designer in achieving as high a standard of design quality as possible. It is to be used as a component part of the Fort Eustis Master Plan and is to be used in conjunction with other more detailed and specific Technical Manuals.

The Installation Design Guide (IDG) is a tool for achieving excellence in installation design. It is a manual which establishes specific design criteria and outlines a program to maintain and enhance Fort Eustis' visual assets while correcting visual liabilities. In general, the scope of the IDG encompasses all significant visual aspects of Fort Eustis' exterior physical environment which can be influenced by construction or maintenance.

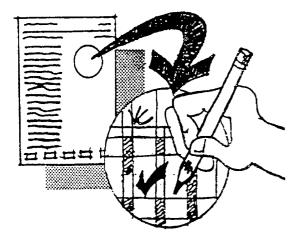
Implementing the IDG Design Criteria

Development of major new facilities, along with numerous smaller improvement projects, represents the opportunity to improve installation design at Fort Eustis. These projects bring the resources necessary for physical improvements to Fort Eustis, and each step in their planning and design is the very process through which the goal of installation excellence is realized.

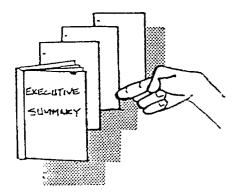
This goal cannot be achieved simply on a project-by-project, or problem-by- problem basis without coordination in terms of an overall concept. The built environment of Fort Eustis must be carefully nurtured through a master planning process which allows each design problem to be resolved as part of a unified conceptual design theme.

The purpose of the IDG is to provide this theme through *design criteria*. The skill and judgement of the DEH staff administering these guidelines is essential to the successful planning and design of future projects. The design criteria represent general principles which must be carefully

Identify on Design Criteria
Checklist Appropriate
Criteria to be Selected



4 Select & Copy Appropriate Background Materials



Executive Summary
Section 1 Introduction and
Overview
Section 2 Visual Zone

interpreted and incorporated by the DEH staff into the particular project in the context of that project's special constraints and opportunities.

The information contained here should be considered a working document requiring updating and revisions. New design criteria and directives should be included as they become operative. The success of this design overview effort will be dependent upon how rigorous the DEH staff is in the proper application of these design guidelines.

How to Use this Document

In utilizing the information in this document, it is necessary to first define the nature of the proposed project. Secondly, the Visual Zone in which the proposed project is located should be identified. Finally, appropriate design criteria related to the proposed project should be selected and put together into a project design package.

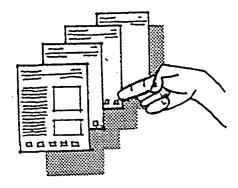
The information in this document is organized in the following manner. An Executive Summary has been prepared as a separate stand-alone document that provides a broad overview of the post's image and goals for achieving an improved visual environment. Section 1 Introduction and Overview provides further background on the post's historical context and functional activities. Section 2 Visual Zones describes and defines each of the nine visual zones and discusses broad design objectives/recommendations for each zone. Section 3 Design Criteria presents detailed design guidelines and criteria for new projects as well as the upgrading and retrofitting of existing development. Section 4 Projects Documentation identified and prioritizes the specific improvement projects that when implemented will have a significant impact on the improvement of the visual environment.

Section 3 Design Criteria incorporates the bulk of the design guideline information. The Design Criteria are organized and presented in six broad design categories.

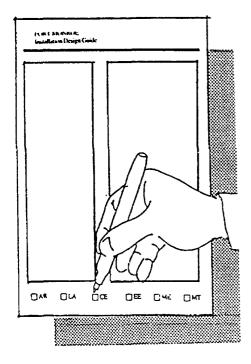
- 1. Site Planning
- 2. Architecture
- 3. Landscape

Preface

5 Select & Copy Appropriate Design Criteria Pages



- 6 Select Appropriate Design Discipline(s) Copy & Check
 - ☐ Architecture
 - ☐ Landscape Architecture
 - ☐ Civil Engineering
 - ☐ Mechanical Engineering
 - ☐ Electrical Engineering
 - Maintenance Personnel



- 4. Site Furnishings
- 5. Lighting and Utilities
- 6. Signs

The detailed information of each of these sections is presented in a format that is appropriate to a specific visual zone(s) and specific to a particular design discipline(s). The DEH staff has the responsibility of identifying the appropriate information to be included in each project design package.

Components of a Project Design Package

After identifying the nature and proper visual zone of the proposed project or maintenance order, the DEH staff member should proceed to select and copy the appropriate Project Design Package materials. These would include:

Background Materials

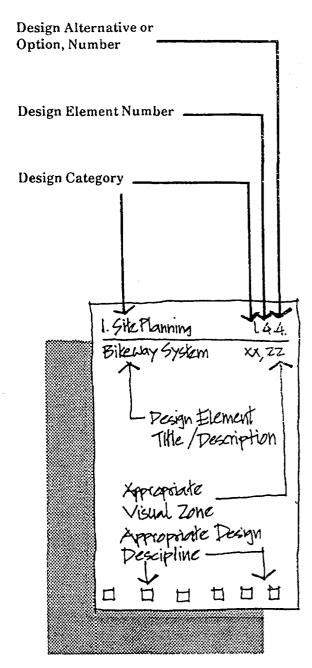
If the project is of a large scale and being designed by an outside Architect/Engineering (A/E) firm unfamiliar with this post, a copy of the Executive Summary, a copy of Section 1 Introduction and Overview, and a copy of the pertinent Section 2 Visual Zone sheets should be put together for the A/E's general information and reference. If the project is of a smaller scale or being designed by the "in-house" staff already familiar with the post, this background material is, obviously, not required.

2. Design Criteria Checklist

The Design Criteria Checklist (sheet V of the *Preface Section*) should then be copied and the appropriate boxes marked that are pertinent to the proposed project, within the appropriate visual zone, and related to the required design disciplines. On the Checklist two boxes are provided in each Visual Zone. If a Design Criteria Sheet is applicable to that Visual Zone, it will be shaded. The other box should be marked for reference in selecting the Design Criteria (DC) Sheets.

3. Design Criteria Sheets

The staff member should then turn to Section 3 Design Criteria and with the annotated checklist, pull out and copy the appropriate Design Criteria Sheets. Care should be taken to replace all sheets in their proper order and to confirm that the



Typical Design Criteria Page

Design Criteria are appropriate to the proposed project. Throughout this document, reference is made to Design Criteria Sheets as DC (ie. <u>DC</u> 3.2.6).

Organization of Design Criteria Sheets

The adjacent illustration describes the organization of information on each page of the Design Criteria. At the top of the page is a general heading related to the Design Category of the sheet. A further description identifies in more detail the Design Element that the sheet refers to within the broader Design Category. Where alternative approaches or options exist, they are numbered and identified. At the bottom of the page are six boxes that refer to different Design Disciplines. They are:

AR - Architecture

LA - Landscape Architecture

CE - Civil Engineering

ME - Mechanical Engineering

EE - Electrical Engineering

MT - Maintenance Personnel

The staff member should check the appropriate box for the appropriate design discipline. On any given project, it is likely that a single Design Criteria page could be useful to several different Design Disciplines. It is the responsibility of the DEH staff member to assure that all necessary information in the Project Design Package is complete and appropriate for each of the disciplines.

Reference is made throughout this document to Visual Zones. They are described in Section 2 of this manual. For reference, the Visual Zone Designations are:

GW Gateway Boulevard Zone

TH Troops Housing Zone

TT Technical Training Zone

TP Third Port Zone

SS Service and Storage Zone

OS Open Space Zone

FA Felker Airfield Zone

FH Family Housing Zone

CS Community Services Zone

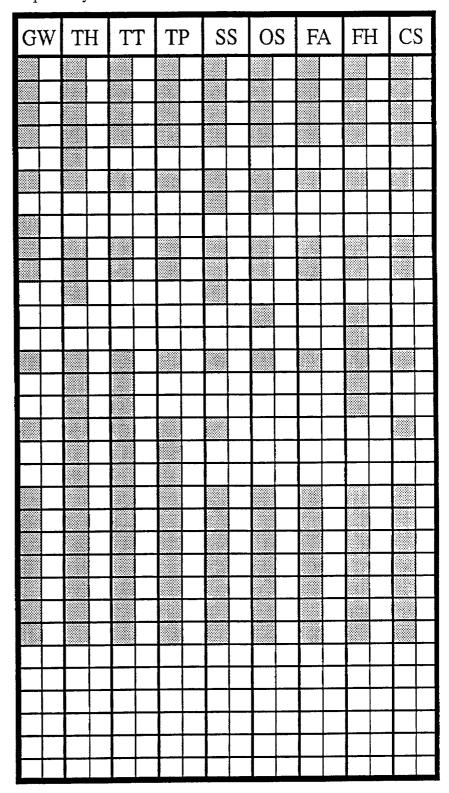
Preface

Design Criteria Checklist

Project: Visual Zone: Prepared By:

1. Site Planning

- 1.0 Introduction
- 1.1 Design for Climatic Conditions
- 1.2 Building Orientation/Siting
- 1.3.0 Building Setbacks
- 1.3.1 Barracks Complex—New Buildings
- 1.4.0 Roadway System Hierarchy
- 1.4.1 Roadways Section-Harrison Rd.
- 1.4.2 Roadways Section-Washington Blvd.
- 1.4.3 Roadways Sec.—Primary & Secondary Rds.
- 1.4.4 Roadway Section w/Troop Pathway
- 1.4.5 Roadway Section-Taylor Ave.
- 1.4.6 Roadway Section-Forested Areas
- 1.4.7 Residential Streets
- 1.5.0 Troop Movement & Bikeways
- 1.5.1 Troop Movement Pathway—Marshall Rd.
- 1.5.2 Troop Movement Pathway-Marshall Rd.
- 1.5.3 Troop Movement Pathway—Primary
- 1.5.4 Troop Movement Pathway—Secondary
- 1.5.5 Troop Movement Pathway—Forested Areas
- 1.5.6 Bike Path
- 1.5.7 Bikeway System—Details
- 1.6.0 Access to Buildings
- 1.6.1 Access/Parking Back
- 1.6.2 Access/Parking Side
- 1.6.3 Access/Parking Front
- 1.7.1 Off-street Parking



(2 of 2)

Project: Visual Zone: Prepared By:

1. Site Planning Cont.

- 1.7.2 Off-street Parking/Small Lots
- 1.7.3 Off-street Parking
- 1.7.4 Off-street Parking-Pedestrian Path
- 1.7.5 Off-street Parking/Planting Islands
- 1.8 Buildings/Formal Open Space
- 1.9 Main Flagstaff
- 1.10 Washington Blvd. Terminus
- 1.11 Warehouse/Storage Yards
- 1.11.1 Loading Dock Orientation
- 1.12 Review Stands/Parade Ground

1.13 New Family Housing Development

1.14 Drainage—Lawn Areas

GW	TH	TT	TP	SS	OS	FA	FH	CS
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LA

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Project: Visual Zone: Prepared By:

2. Architecture

- 2.0 General Notes
- 2.1.1 Massing Large Buildings
- 2.1.2 Massing Single Story Buildings
- 2.1.3 Massing 2 & 3 Story Buildings
- 2.1.4 Building height
- 2.1.5 Articulating Taller Buildings
- 2.2.1 Char: Contemporary Brick, Admin.
- 2.2.2 Char: Contemporary Brick, Barracks
- 2.2.3 Char: Contemporary Brick, Single Story
- 2.2.4 Char: Contemporary Brick, Single Story
- 2.2.5 Character: Gatehouse/Sentry Station
- 2.2.6 Char: Contemporary Stucco&Brick, Admin.
- 2.2.7 Char: Contemporary Stucco & Brick, Admin.
- 2.2.8 Char: Contemporary Stucco & Brick, Barracks
- 2.2.9 Char: Contem. Stucco & Brick, Single Story
- 2.2.10 Char. Contem. Stucco & Brick, Single Story
- 2.2.11 Character: Review Stands
- 2.2.12 Character: Family Housing
- 2.2.13 Character: Warehouses
- 2.3.1 Detailing: Contemporary Stucco & Brick
- 2.3.2 Fenestration: Replacement Windows
- 2.3.3 Fenestration: Replacement Windows
- 2.3.4 Fenestration: Window Placement
- 2.3.5 Detailing of Openings
- 2.4.1 Building Entrance

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Project: Visual Zone: Prepared By:

2. Architecture con't.

2.4.2 Ramps at Entrances

2.4.3 Barracks Entrances

2.5.1 Technical Training Center Buildings

2.5.3 Felker Airfield

2.5.3 Securing Existing Openings

2.6.0 Materials & Colors: General Notes

2.6.1 Materials & Colors: Brick Theme

2.6.2 Materials & Colors: Stucco & Brick Theme

2.6.3 Materials & Colors: Stucco

2.6.4 Materials & Colors: Technical Training Ctr.

2.6.5 Materials & Colors: Third Post

2.6.6 Materials & Colors: Felker Airfield

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Design Criteria Checklist

Project: Visual Zone: Prepared By:

3. Landscape

- 3.0 Introduction
- 3.1.1 Street Tree Planting
- 3.2.1 Screening Parking: Planting & Berms
- 3.2.2 Screening Parking: Low Walls
- 3.2.3 Screening Secured Areas
- 3.2.4 Screening Secured Areas—Berms
- 3.2.5 Screening Dumpsters—Masonry Walls
- 3.2.6 Screening Dumpsters—Wood Fencing
- 3.2.7 Screening Dumpsters—Planting
- 3.2.8 Locating Dumpsters
- 3.2.9 Screening Remote Toilets
- 3.2.10 Screening Mechanical Equipment
- 3.2.11 Screening Loading Docks
- 3.2.12 Motor Pool Entrance
- 3.2.13 Seasonal Parking
- 3.3.1 Plazas & Courtyards
- 3.3.2 Plazas & Courtyards
- 3.3.3 Planting—Building Entrances
- 3.4.1 Barracks Areas
- 3.4.2 Barracks Entrances
- 3.4.3 Troop Barracks Grounds
- 3.4.4 Troop Mustering/Parking Lots
- 3.4.5 Troop Crossings
- 3.4.6 Troop Movement/Main Cantonment
- 3.4.7 Primary Troop Movement Path-Marshall Rd.

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Project: Visual Zone: Prepared By:

3. Landscape cont.

- 3.4.5 Parade Ground/Review Stands
- 3.5.1 Landscape Improvements—Family Housing
- 3.5.2 Rear Yard/Patio Treatment
- 3.5.3 Proximity to Buildings
- 3.5.4 Forest Edge
- 3.6 Planting Matrix
- 3.7 Paving Matrix

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Preface

Design Criteria Checklist

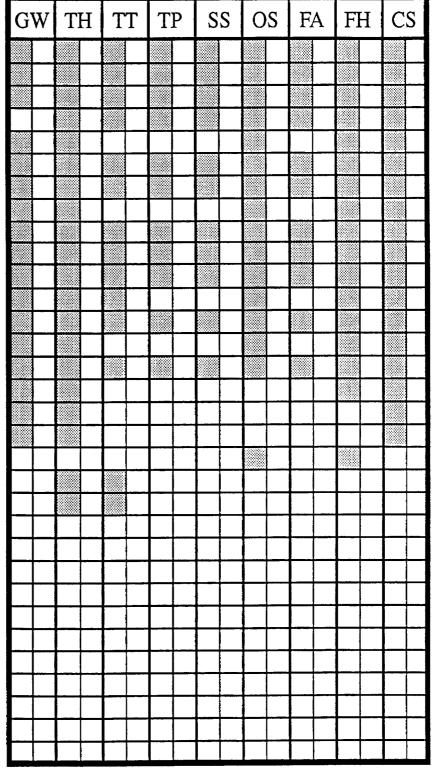
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Visual Zone:
Prepared By:

Project:

4. Site Furnishings

- 4.0 Site Furnishing: Matrix
- 4.1.0 General Notes
- 4.1.1 Benches/Tables
- 4.1.2 Seating
- 4.1.3 Bollards
- 4.1.4 Bollards
- 4.1.5 Trash Receptacles
- 4.1.6 Fencing
- 4.1.7 Fencing/Railing
- 4.1.8 Phone Booths/Bus Shelters
- 4.1.9 Flagpoles/Pennant Holder
- 4.1.10 Drinking Fountains
- .1.11 Bike Rack
- 4.2.1 Bench/Sidewalk
- 4.2.2 Bus Shelter
- 4.2.3 Relationships Buildings/Open Spaces
- 4.2.4 Relationships Plaza/Courtyards
- 4.2.5 Seating Plazas/Courtyards
- 4.2.6 Recreation/Picnic Areas
- 4.2.7 Lawn Barrier Rail
- 4.2.8 Battalion Monuments





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Project: Visual Zone: Prepared By:

5. Lighting & Utilities

- 5.0 Introduction
- 5.1 Light Matrix
- 5.2 Light Fixtures
- 5.3 Light Fixtures
- 5.4 Light Fixtures
- 5.5.0 Locating Overhead Lines
- 5.5.1 Roadway Lighting
- 5.5.2 Parking & Pedestrian Lighting
- 5.6.1 Steam Pipes
- 5.6.2 Steam Pipes
- 5.7 Utilities Matrix

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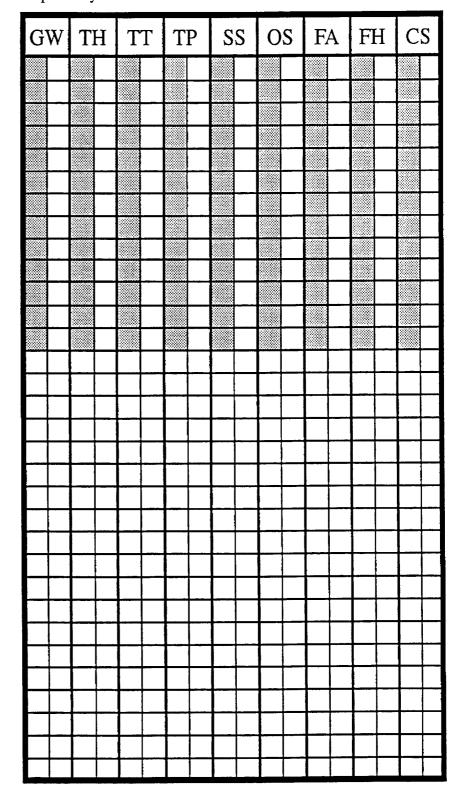
Preface

Design Criteria Checklist

Project: Visual Zone: Prepared By:

6. Signage

- 6.0 General Notes (2 pages)
- 6.1 Sign Types & Dimensions (3 pages)
- 6.2.1 Materials & Fabrication: Type A
- 6.2.2 Materials & Fabrication: Type A
- 6.2.3 Materials & Fabrication: Type B
- 6.2.4 Materials & Fabrication: Type C
- 6.3 Typography (2 pages)
- 6.4.1 Colors: Types A & B
- 6.4.2 Colors: Type C
- 6.5.1 Sign Layout: Type A
- 6.5.2 Sign Layout: Type B
- 6.5.3 Sign Layout: Type B
- 6.5.4 Sign Layout: Type C



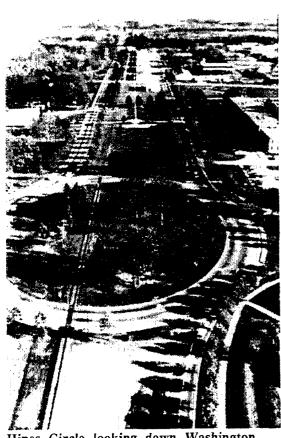


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Hines Circle looking down Washington Boulevard to Seay Plaza

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Existing Activities and Facilities

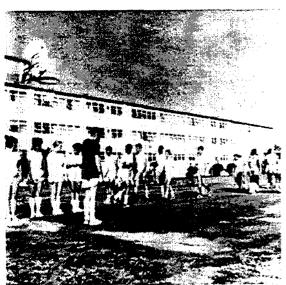
The organization of Fort Eustis is unique in that access is limited to a single point and the main cantonment is a cluster of facilities flanking the main access roadway. The pattern of development of the post since 1917 has been shaped by the natural topography, wetland areas, alignment of major rail lines and roadways. The straight axis of Washington Boulevard, for example, was dictated by the railway alignment. The gradual arching of Lee Boulevard was a response to the shape of the high ground lying between Warwick River and the James River. The pattern of streets first established as Camp Abraham Eustis east of the rail line (Washington Boulevard) and the Balloon Observer's School to the west is still evident today.

As one enters the post the Headquarters Building and the Transportation School and Administration Building at Saey Plaza form an administrative cluster flanking Washington Boulevard. The Transportation Museum and the formal parade ground of Murphy Field are adjacent to and compliment this administrative area.

Just beyond the administrative cluster and adjacent to Hines Circle is an area which contains nearly all of the post's community support facilities. The Post Exchange and all "shopping" type functions lie to the east of Washington Boulevard, while the Anderson Field House, NCO/Enlisted Club, theater and ball fields lie to the west. This area is a hub of the post, used by a wide variety of groups. Troops converge on the area by foot and at the PX, the parking lot is filled with the cars of permanent party, their families and retirees using the facilities. This is an area which is extremely important and highly visible because it provides the basic community support functions for the whole post.

There are two major areas for enlisted personnel housing. Advanced Individual Training (AIT) students, who generally spend six weeks at Fort Eustis, are housed in barracks between Darcey Place and Pearl Place. Immediately adjacent to

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Troop Activity Outside Barracks



Bunker Training Area at McMahon Street features a dramatic central space framed by industrial scale buildings.

this cluster of barracks are open parade grounds, athletic fields and recreational facilities (flanking Monroe Avenue from Darcy Place to Anderson Place).

The second troop housing area forms a cluster of sixteen barracks buildings flanking Cameron Place and is the home for the Seventh Transportation Group (Terminal). The area is strongly organized with a rigid grid of barracks north of Monroe Avenue and battallion headquarters and other smaller administrative buildings south of Monroe Avenue. The Seventh Group shares the same athletic and recreational facilities with the students to the east. To the west they have convenient access to their own motor pool and Third Port facilities.

The 2700 area is a third troop housing cluster along Madison Avenue located apart from the other two previously discussed. It is surrounded on all sides with functions which are not compatible with a troop housing area. When new barracks facilities are constructed these will be converted to administration. The strong geometric organization of the building, however, create a central open green space, which provides an opportunity for a new focus and identity.

The district south of Marshall Street and east of Washington Boulevard forms a cluster of training facilities. Most significant are the motor pool area fronting on Washington Boulevard and the Bunker Training Area flanking McMahon Street. The motor pool generates truck traffic on Washington Boulevard. Its location directly across Washington Boulevard from the student barracks is convenient for these troops. The Bunker Training Area along McMahon Street lies at the other end of Marshall Street from the troop's barracks. This makes Marshall Street a very important road for marching troops between the Bunker Training Area and their morning, lunch time and evening routines at the barracks areas. Indeed, Marshall Street is more important as a troop movement pathway than it is as a connecting street for vehicular movement.

Introduction and Overview



Seventh Group Barracks

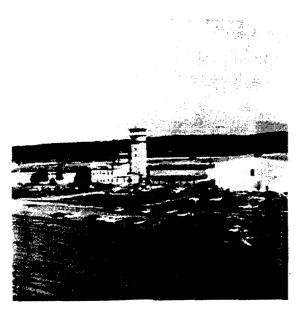


View of Third Port

The area along Taylor Avenue from Washington Boulevard all the way to Harrison Road is filled with facilities which are service and support functions for other activities on post. The Post Engineering and Maintenance Center is a cluster of buildings and fenced-in areas between Mulberry Island Road and Washington Boulevard. Nearly all the warehouses on post are collected together along Taylor Avenue and Patch Road. (The one notable exception is the area of warehouses in the median of Washington Boulevard near the Transportation Museum.) The present Commissary will be moved away from Patch Road to the present PX area, completing the consolidation of the warehouse district.

The Third Port functions as a seaport operated by the Seventh Group who are housed nearby at Cameron Place (800 block). Training exercises proceed both day and night at the port involving cargo handling equipment on land and continuous ship movements on the water. All this activity is controlled and monitored by the Harbor Master whose office is located at the top of the bluff, although it presently has no direct view of the dock areas. The port is organized with pier facilities along the water's edge accommodating cargo loading and marine repair. A land ship and winches for freight handling exercises are also located along the waterfront. On the high ground overlooking the port are a cluster of support buildings with several loosely defined parking areas. The Aviation Applied Technology Directorate (AATD) of the Aviation Research and Technology Office (AVSCOM) administration building is situated immediately adjacent to the port fronting on Lee Boulevard. It is functionally unrelated to the Third Port. Two houses which are quarters for the Post Commander and Deputy Commandant, U.S. Army Transportation and Logistics Schools are also located on the bluff overlooking one of the noisiest parts of the port.

Harrison Road extends along the James River to Red Beach which is the site of amphibious exercises. This scenic drive with panoramic views to the James River Fleet is a valuable visual asset.



Felker Army Airfield

Family housing is clustered in several different areas of the post. The NCO family housing areas are located in the center of the main cantonment along Washington Boulevard. The officer family housing is located in the southeast quadrant of the post along Wilson and Pershing Avenues. These areas are suburban family neighborhoods with the normal dynamics of family life. Building and landscape maintenance is generally carried out uniformly which often results in a lack of individual identity for each family's home.

Mulberry Island Road extends from the main cantonement area to reach several outlying facilities including Felker Army Airfield, the golf course, and range areas. The Airfield itself is organized with aircraft hangars and service buildings in a straight line with apron and flight test areas on either side. The access roadway runs along this line of buildings but crosses from one side to the other at one point in a seemingly haphazard fashion. Ideally, this roadway should be continued along the south side of all the buildings, although the apron area of the new Applied Instruction/Technical Training facility makes this scheme difficult.

The 3300 Block area lies just outside the main cantonment at the foot of Goodman Road. It is rigidly organized with large aircraft hangar buildings flanking an expansive rectangular tarmac area. The surrounding woodlands and Brown's Lake give this area a separate isolated identity. This area will become increasingly significant in the future as a Technical Training Center.

Although facilities for related functions are often clustered together, functional relationships between different areas generate intense pedestrian and vehicular movement demands. Daily troop movements between barracks and training shops generate Fort Eustis' dynamic image as a vital army post. It is extremely important that the design of the physical environment respond appropriately to these important activities; training is the essence of the installation.

Visual Zones 1

Introduction

GW TH TT TP SS OS FA FH CS

General Definition

Nine discernible visual zones have been identified for the organization of the Fort Eustis environment. Often a specific type of activity or land use is what distinguishes one zone from another; however, a visual zone encompasses an area larger than one single land use reservation and is defined by the positions of buildings, roadways and landscape elements. As a result, the land-use subdivisions that occur within the Reservation Plan are not perceived as visual entities in reality. In these cases, to achieve a visual sense of orderliness, facility design must be coordinated for the entire visual zone. For this reason the design criteria of the IDG are presented according to their visual zone appropriateness. In the following Visual Zone Map, the nine Visual Zones that encompass Fort Eustis are graphically defined.

On the following pages are described the character of each visual zone. In addition, general design goals, objectives and recommendations are outlined for each zone. These goal statements form the basis for the specific design guidelines which follow.

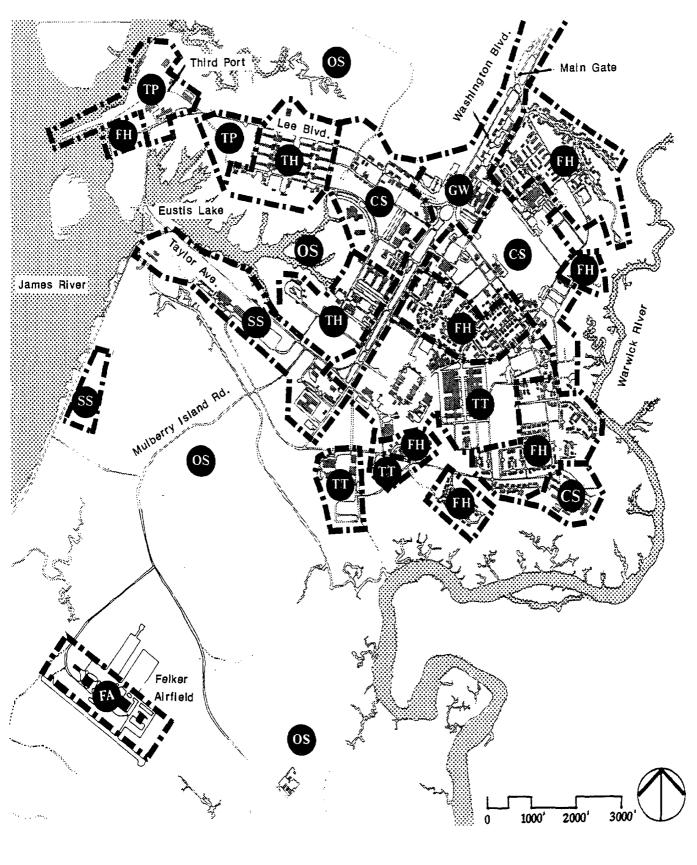
The Design Guidelines and Criteria that follow have been organized based upon broad design disciplines (i.e., 1. Site Planning, 2. Architecture, 3. Landscape, 4. Site Furnishings, 5. Lighting and Utilities, 6. Signage); their appropriateness is referenced for each Visual Zone.

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Visual Zones

Introduction

GW TH TT TP SS OS FA FH CS



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Gateway Boulevard Zone

GW

Zone Description

The approach and entrance to Ft. Eustis from State Route 105 is dramatic as the roadway climbs the hill past Route 60 and enters a woodland corridor approaching the main gate. From the main gate to the Post Headquarters the woodland setting of the post is apparent. The Washington Boulevard greenway opens at Sey Plaza and continues as a landscaped boulevard to Taylor Avenue.

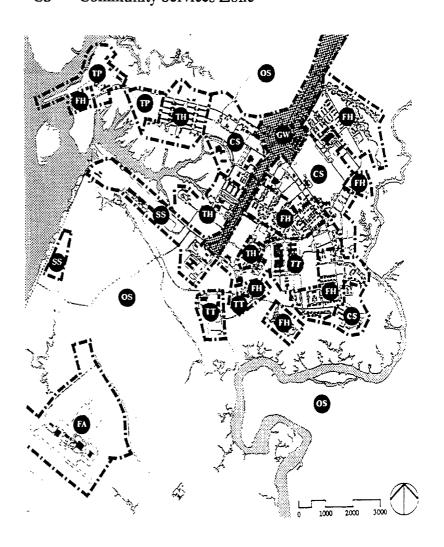
This visual zone includes the entire length of Washington Boulevard from Route 60 to Taylor Avenue. To ensure continuity of treatment, certain areas flanking the boulevard are also included. These include the Transportation Museum and grounds, the Post Headquarters area, and the Transportation School and Administrative Building.

The visual assets and liabilities of the Gateway Zone and design recommendations are outlined below.

Assets

Well maintained landscaping and lawns along the length of Washington Boulevard show Ft. Eustis at its best. The rows of willow oaks framing Sey Plaza, the informal massings of trees within Hines Circle, and the landscaped buffer along the edge of the motor pool represent the successful results of a well planned landscape policy.

GW	Gateway Boulevard Zone
TH	Troops Housing Zone
TT	Technical Training Zone
TP	Third Port Zone
SS	Service and Storage Zone
OS	Open Space Zone
FA	Felker Airfield Zone
FH	Family Housing Zone
CS	Community Services Zone



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Visual Zones

Gateway Zone

- A single entrance to the post through a woodland corridor approaching the main gate presents a positive controlled visual image on arrival.
- 3. The display of large scale equipment at the Transportation Museum is visible from Washington Boulevard and provides a glimpse of the kinds of activity that take place on post.
- Major pedestrian crossing points along Washington Boulevard are not well marked and are haphazard in appearance.
- The steam plant at Marshall Road, like many of the other steam plants on posts, appears as a run-down industrial building.

Liabilities

- The warehouses in the median of Washington Boulevard near the Transportation Museum are inappropriate for this highly visible area and block the view of the Transportation Museum from inbound traffic lanes. The security fencing and parking along Washington Boulevard, detract from the image of the Transportation Museum.
- Between Tyler and Jackson Avenues the view from Washington Boulevard to the west reveals an awkward view of the rear of Anderson Field House as well as several above-ground steam lines.
- The bus station just outside the entry gate detracts from the image of this area.
- The entrances to the Post Headquarters Building and to the Transportation School and Administration Building should be upgraded.



Storage yards should be screened by landscaping at the terminus of Washington Boulevard.

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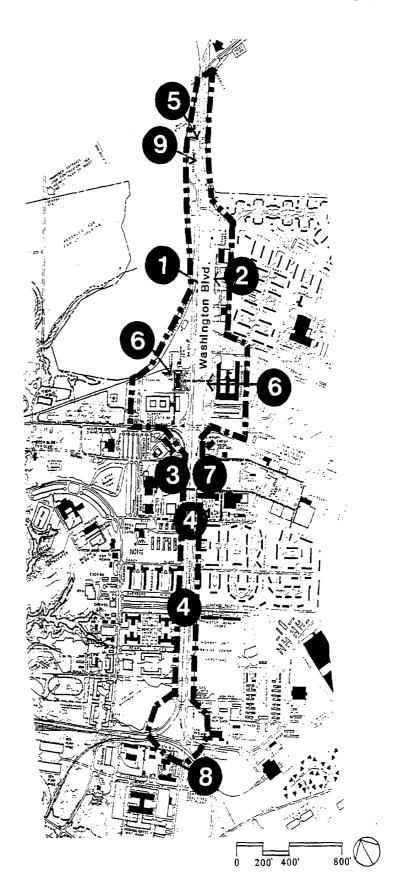
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Gateway Zone

GW

Design Recommendations

- 1. Remove the warehouses from the median areas of Washington Boulevard, as soon as possible. Those storage functions should be relocated to the warehouse area south of Taylor Avenue. Open up the view to the Transportation Museum from the inbound lanes and allow for direct access to the Museum with a left hand turn across the median.
- 2. Improve the appearance of the outdoor equipment display at the Transportation Museum by upgrading the security fence, to enhance visibility of the equipment from Washington Boulevard. (See Site Furnishings Section)
- 3. Realign (straighten) the inbound lanes of Washington Boulevard from Hines Circle to Darcy Place. Screen the view to the rear of Anderson Field House with street tree plantings along the road. Relocate steam lines underground in this area (within 100' of Washington Boulevard.)
- 4. Improve pedestrian crossings at critical points along Washington Boulevard, incorporating appropriately paved pathways across the median, roadway markings, signage and lighting.
- 5. Improve the appearance of the bus station outside the main gate with appropriate improvements to the building, signage, parking, and circulation areas, as well as landscaped areas to screen the view from inbound lanes.



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Gateway Zone

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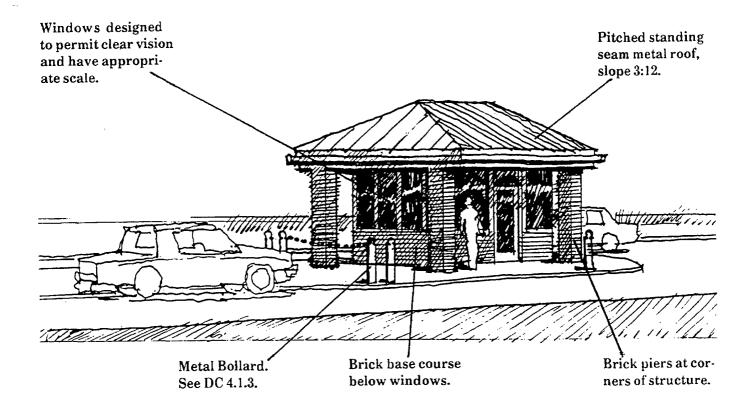
- 6. Improve the image of the Transportation School and Administration Building with appropriate architectural treatment, especially at the entrances.
- 7. Allow direct access into the Post Exchange parking area by providing a left turn lane across the median at that location. Eliminate other unnecessary crossings and intersections, such as the Tyler/Patton intersection.
- 8. Create a strong definable terminus to the Washington Boulevard axis at the Taylor Avenue intersection. Remove building No. 1420 and relocate storage functions and fencing further from public roadway. Add

Gatehouse Improvements Concept

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- landscaping and berming to reduce visibility of Post Engineering Facilities.
- 9. Upgrade the appearance of the main gate with improvements to the gatehouse and landscaping. Remove pavement in the lane divider (striped area) in front of and behind the gatehouse, and create instead a curbed planted island.



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Troops Housing Zone

Zone Description

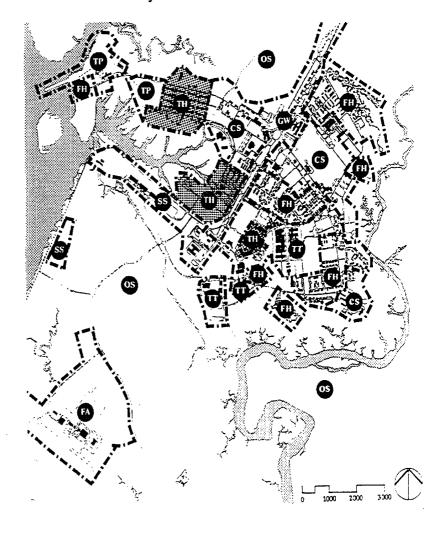
The two main areas of enlisted barracks are the student's area between Darcy Place and Taylor Avenue west of Washington Boulevard (600/1000 block), and the Seventh Group barracks between Anderson Place and Lucus Place south of Lee Boulevard (800 block). Smaller buildings which house battalion headquarters, administrative offices, and medical services are located immediately adjacent to each of these barracks areas along the forest edge across Monroe Avenue and are included in the same visual zone. Sites of future barracks buildings, south of Pearl Place, are also included in this visual zone. The 2700 area along Madison Avenue is the third area of enlisted barracks. This area will be converted to administrative facilities upon completion of the barracks complex.

In each of these troop housing zones it is important to consider the barracks together with their surrounding grounds as elements which together make up the soldier's living/training environment. Both buildings and grounds are extensively used. To a large degree they determine the quality of life and day-to-day experience of trainees and permanent personnel at Ft. Eustis.

Assets

The clear geometric organization of the barracks buildings, both at the Seventh Group area and at Sheppard Place, create courtyard-like spaces between the wings of the buildings providing a sense of place.

GW Gateway Boulevard Zone TH **Troops Housing Zone** TT Technical Training Zone TΡ Third Port Zone Service and Storage Zone SS OS Open Space Zone FA Felker Airfield Zone FH Family Housing Zone **CS** Community Services Zone



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Troops Housing Zone

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- 2. The locations of most of the building service drives have been located to create a rear service courtyard.
- 3. Most barracks are located adjacent to recreational and athletic facilities.

Liabilities

- 1. The condition of the grounds surrounding the barracks is in poor condition. This is especially true in the Seventh Group area.
- 2. The regimented assembly of troops is a routine and frequent occurance. There is no specially designated area for this activity, and as a result, it often takes place in parking lots.
- 3. At the Seventh Group barracks area, there is a significant demand for parking, causing these parking lots to overflow.
- 4. The design of stairs and entryways at barracks appear stark and lack identity.
- 5. The motor pool immediately to the west of the Seventh Group barracks area provides an unsightly edge along Lucus Place.
- 6. There is no definition or "edge" between troop housing areas and other more utilitarian areas of the post.



The barracks courtyards are intensely utilized for physical exercise on a daily basis.

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Troop Housing Zone Sheppard Place Vicinity

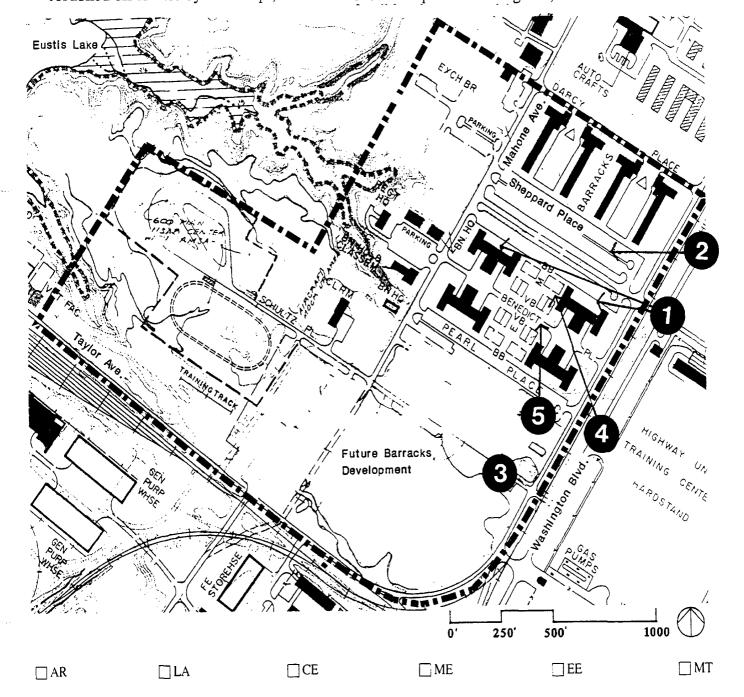
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Design Recommendations

1. Planted islands should be added to the parking lot at Sheppard Place to create troop <u>mustering areas</u> within the parking lot near the barracks. When the lot is not fully utilized for parking (which may be most of the time), these areas can be easily cordoned off for use by the troops,

clear areas free of obstructions. The planted islands are to define these mustering areas as well as improving the general appearance of the parking lot.

2. Adjust the position of the above-ground steam lines so that they do not obstruct the circulation through the parking area. Pipes should be placed below grade, if

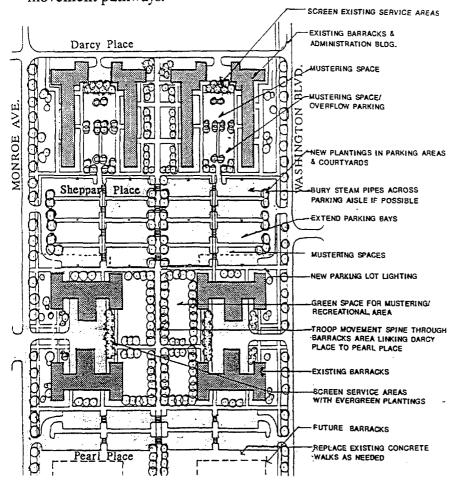


Troop Housing (Sheppard Place vicinity)

TH

feasible where cross driveways are needed. Expansion loops should be located to accommodate pedestrian traffic across the line, and must be wide enough to accommodate a pathway.

- 3. Orient new barracks buildings, which are planned south of Pearl Place, around a central axis of open space, a direct extension of the existing space between buildings No. 1003 and 1004. Locate troop mustering areas in this space and link them to Sheppard Place with troop movement pathways.
- 4. Create a network of <u>troop movement</u> <u>pathways</u> throughout the barracks complex, with links to Marshall Road and Monroe Avenue.
- 5. Provide appropriate landscaping and paving in both existing and new barracks courtyards to better support the intense troop activities that take place there. Appropriate plantings, paving patterns lighting and site furnishings should be designed to accommodate troop mustering, physical training and other regular functions.



Concept Plan showing appropriate improvements to the Sheppard Place parking area, which will create troop mustering areas.

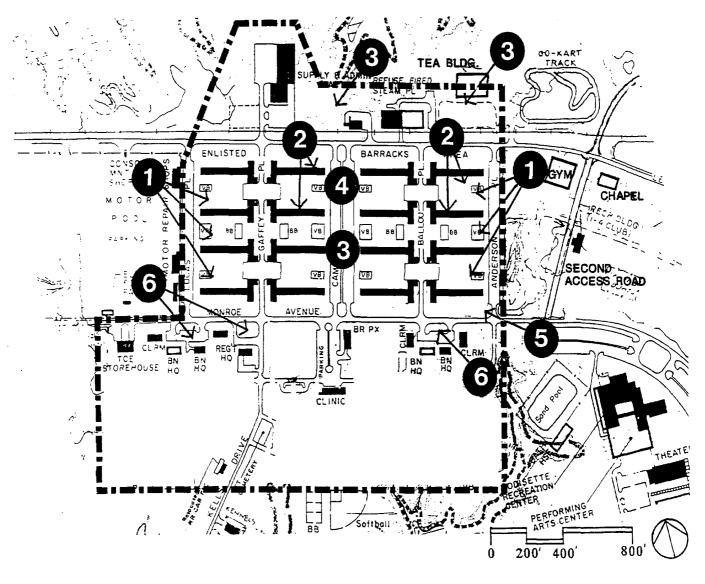
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Troop Housing Zone Cameron Place Vicinity

Design Recommendations

- 1. Improve the courtyard areas between the barracks buildings with appropriate landscaping, paving and lighting to better support the intense troop activities that take place there (eg. mustering, physical training/"PT", informal recreation/sports).
- 2. Improve entrance areas at barracks buildings to better accommodate

- troop activities (eg. seating and lighting) and to recognize the symbolic importance of the units' front door (eg. signage and appropriate siting of unit monuments).
- 3. Upgrade parking areas with planted islands and clear circulation patterns, according to Design Criteria (Site Planning Section). Link barracks courtyards across Cameron Pl. with troop/pedestrian crossings.



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Troop Housing Zone Cameron Place Vicinity

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- 5. Provide a troop movement pathway along Monroe Avenue.
- 6. Clarify access and circulation and relieve congestion in parking lots along south side of Monroe Avenue. See DC 1.6.0 through 1.7.5.



Appropriate landscape and paving treatment of the 800 block courtyard areas is needed to better support troop activities.

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TECHNICAL TRAINING ZONE THIRD PORT ZONE FELKER ARMY AIRFIELD ZONE

Zone Description

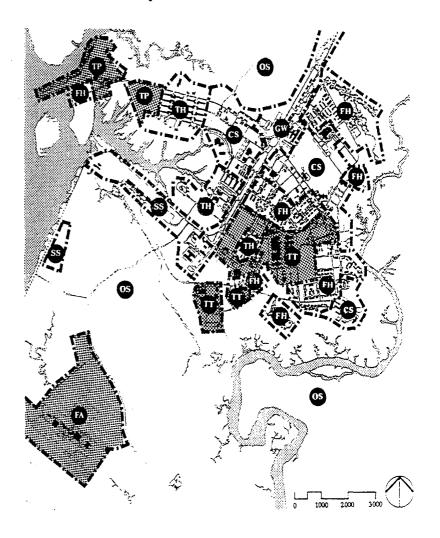
The largest concentration of training facilities is the aviation maintenance training shops flanking McMahon Street (Bunker Training Area). Nearby is the post motor pool complete with associated maintenance buildings. A third area, south of Wilson Avenue, will become more significant as the future location of a secondary technical training area. The Army Training Support Center headquarters will be located east of Brown's Lake along Wilson Avenue. This activity develops training strategies for Hq. TRADOC. The facility is mostly administrative in function.

The Third Port and Felker Army
Airfield are the remaining two areas of
technical training on the post. Both are
located just outside the main
cantonement and will share many of
the same Design Criteria as the
Technical Training Zone. The
buildings, apron areas, and access
roadways of Felker Airfield and the
Third Port are included within the
visual zone.

Assets

 The large scale technical training buildings flanking McMahon Street form a symmetrical grouping that create a central plaza space and a strong focus. The industrial scale, consistent massing, and architectural treatment of the buildings give this area a unified image. TT TP FA

- GW Gateway Boulevard Zone
- TH Troops Housing Zone
- TT Technical Training Zone
- TP Third Port Zone
- SS Service and Storage Zone
- OS Open Space Zone
- FA Felker Airfield Zone
- FH Family Housing Zone
- CS Community Services Zone



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Visual Zones

Fechnical Training Zone Third Port Zone Felker Army Airfield Zone

- 2. Spectacular views of the river and port activity are afforded from the bluff overlooking the Third Port area. The maritime scale of the port itself and the visual interest of the constant port activity provides a positive identity for the Seventh Group. Kerr Road is the single access roadway and provides an opportunity to develop a strong sense of arrival.
- 3. Extensive new development is planned for most of the technical training areas. These new facilities will provide an opportunity for significantly improving the visual quality of these areas.
- 4. The technical training areas have been developed with very strong geometric layouts that give a strong sense of orderliness. The buildings themselves are often large scale and represent some of the most dramatic structures on the post.

Liabilities

- is cluttered by the expansive remnant paved area at the top of the bluff as well as the hodge podge of storage tanks, maintenance areas, and fenced storage yards along the water's edge. Nighttime activity at the base of the pier represents a noise problem for the nearby Azalea and Magnolia Houses.
- 2. The main access road at Felker Army Airfield is weakly defined and at points is not separated from

TT TP FA

- apron areas. Parking areas are also, unorganized and often not separated from the main roadway or apron areas. Security fence has been installed with no concern for the visual assets of the area.
- 3. The impressive scale of buildings at Felker Army Airfield is undercut by their apparent need of maintenance and by their conflicting architectural designs, materials, finishes, and colors. Storage tanks and temporary storage equipment is frequently located on the most highly visible side of the buildings.
- 4. At the 3300 block technical training areas the expansive tarmac area creates a barren, desolate image. The buildings lack uniform scale, design, materials and orientation.
- 5. The edge of the post motor pool on the north side of Taylor Avenue lacks sufficient landscape buffer area along that roadway.

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Visual Zones

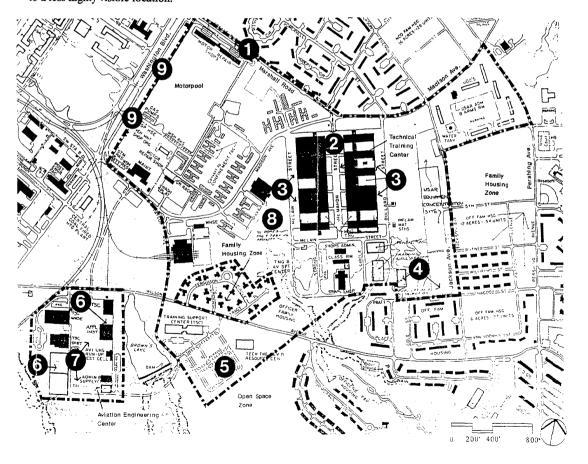
Technical Training Zone

Design Recommendations

- 1. Establish Marshall Road as a major troop movement pathway linking the Technical Training Center at McMahon Street (Bunker Training Area) with the barracks complex at Sheppard Place. Use appropriate paving materials and lighting standards to establish this route as a foot soldier area. Separate vehicular traffic from the pathway. Bollards and curbs should clearly indicate that vehicular traffic is not permitted on the troop surface. Allowances may be made for occasional emergency and maintenance vehicles. Access to existing housing is to be maintained with parking relocated away from Marshall Road if necessary to eliminate conflicts with troop traffic.
- 2. Establish McMahon Street as a grand central plaza space and the focus of the Technical Training CenteratMcMahon Street (Bunker Training Area). With minor improvements this space can be transformed from an ad-hoc parking lot to a troop-oriented space free of the interference of vehicles, and a more useful functional extension of the interior training facilities which flank it on both sides. Parking is to be restricted entirely or limited to small designated parking lots at each end north and south. Troop pathways are to enter the space on center axis, with mustering areas located at the center of the space between the buildings.
- 3. Alterations and additions to the existing training buildings are to conform to the Architectural Design Criteria. New infill portions must be

- consistent with the existing industrial type buildings. Horizontal roof lines of consistent heights aligned with existing roof lines are to be emphasized. Fenestration is also to align with existing sill and head heights. Material and color selections must also be consistent with existing portions.
- Organize more efficient parking areas at the rears of the large buildings. More efficient parking layout along McLain and Ballard Streets will allow for less parking on McMahon Street.
- 5. New administrative facilities for the Army Training Support Center are planned to be adjacent to existing family housing neighborhoods are to maintain adequate setbacks from those residential areas Landscaped buffer areas are to be provided to screen the view and visually separate the residential areas from the non-residential facilities
- 6. Proposed expansion of technical training in the 3300 block is to be planned to minimize taking of existing forested area and maintain existing stands of trees where possible. Natural understory growth is to be saved as a low maintenance landscape treatment. Care must be taken during construction to protect tree roots from damage by construction vehicles.
- New and existing buildings in this area are to be coordinated in appearance through application of the Architectural Design Criteria. (See DC 2.6).

8. Entrances to the Motorpool along Washington Boulevard are to be improved with upgraded guard-houses and planted islands which screen the direct view into the motorpool interior. (See DC 3.2.12). P.O.V. parking immediately in front of the gate is to be relocated to a less highly visible location.



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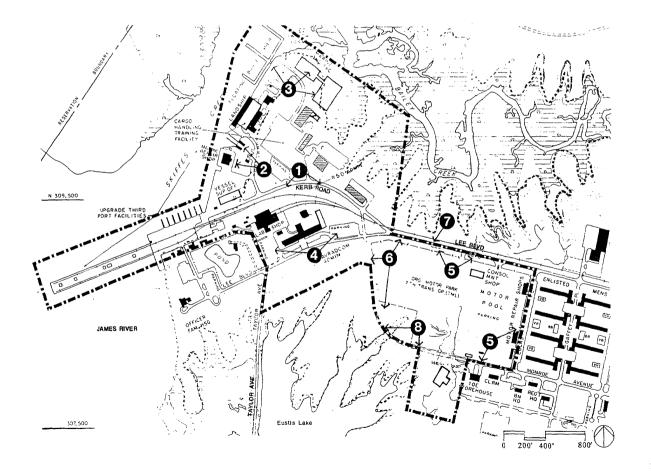
Third Port Zone

Design Recommendations

- 1. Create a clear separation between Kerr Road, (the main entrance road) and areas of restricted access, such as the Cargo Handling Training Area. The roadway is to be separated from adjacent open areas of paving by 15' wide (min). planted strips with specific points of access leading to parking lots, loading and cargo areas. If needed, a cul-de-sac (turn-around) can be provided at the terminus of Kerr Road at the guard house.
- 2. Upgrade the appearance of existing waterfront buildings and fenced storage areas. Buildings are to be painted according to an overall coordinated color scheme (See DC 2.6). A two color scheme can be used to unify the appearance of buildings of various sizes and shapes. Storage yard fences are to be painted or made to conform with the Site Furnishings design criteria (See DC 4.1.6 and 4.1.7). Where possible storage yards are to be located so that they are not visible from Kerr Road.
- 3. New development is to be sited according to an overall Site Development Master Plan for the Third Port area. Specific sizes, location and orientation of each building is to be shown on this plan along with specific locations and design of roadways, access drives, pedestrian and parking areas as well as landscaping. New structures are to be designed in accordance with the Architectural Design Criteria (See DC 2.6).

- 4. Organize parking lots adjacent to the AVSCOM Administration Building. A minimum 15' landscaped setback from Lee Boulevard is to be maintained. Parking aisles need be no more than 60' wide (18' deep parking stalls on each side of a 24' wide moving lane). A few controlled points of access are better than numerous openings along Lee Boulevard. Follow the Design Criteria for parking areas: DC 1.6.0 through DC 1.7.5
- 5. Add landscaped screen at the edge of the motorpool along Lee Boulevard. (See DC 3.2.3 and DC 3.2.12). Provide additional setback for landscaped buffer on all other sides of the motorpool (15' min, 30' recommended). This is especially important along the Monroe Avenue edge, as this street is extended to intersect with Lee Boulevard.
- 6. Where motorpool must be expanded into areas of existing forest, such as along Lee Boulevard, a 75' setback from the roadway is recommended, so that a 50' depth of the existing tall trees can be maintained between the security fence and the road. This applies to Monroe Avenue as well.
- 7. Upgrade the pedestrian path along Lee Boulevard and linking the Seventh Group barracks (the 800 block) with the Third Port. See DC 1.4.3 for Lee Boulevard cross section profile, DC 1.5.4 - 1.5.5 and DC 3.4.3 for troop movement pathway details.
- 8. Preserve adequate setbacks from Lake Eustis when locating new development in this area. The tree

line must not be broken, as viewed from the opposite side of the lake from Taylor Avenue. New loblolly pines should be planted to restore the forest edge at the new shop building which is now visible from Taylor Avenue.



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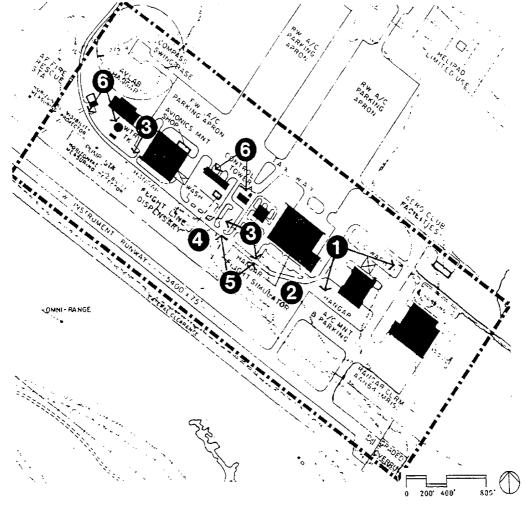
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Design Recommendations

Felker Army Airfield Zone

- 1. Establish clear separation between Condon Road and aircraft apron areas. Access from Condon Road onto apron areas is to be limited to a few well marked control points. Otherwise, the roadway is to be separated from all apron and parking areas by a landscaped strip of 30' min. width. Planted earth berms of 3-4 ft. height are to be used where visual security is of concern.
- 2. Condon Road no longer functions as a loop road passing through the apron area, but terminates at building no. 2413. Therefore, a cul-de-sac must be provided at the

- end of the road to allow traffic to be turned back and returned to the entrance. The cul-de-sac should have an outside diameter of 80-100 ft.
- 3. Vehicular access to specific buildings and individual parking areas is to be limited to clearly defined points along Condon Road. Any one parking lot should have only one or two access drives, rather than an entirely open edge. In general, parking lots are to be setback from Condon Road by 15 ft. (min.) with a landscaped strip between. No parking is permitted directly on or adjacent to Condon Road. Existing perpendicular parking along edge of road must be relocated.



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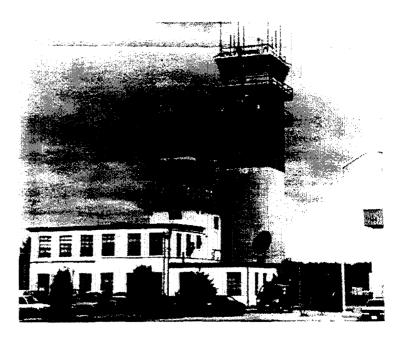
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Felker Army Airfield Zone

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- 4. Regulate design of parking lots south of Condon Road. As additional parking lots are built, align them with Condon Road with consistent dimensions and setback distances. Existing lots have been developed with inconsistent alignments for no apparent reason.
- 5. Roadside drainage swales are to be graded with shallow slopes along their sides. Adequate space must be provided to allow for the increased width where necessary. (See DC 1.12).
- 6. New and existing buildings of various heights and scale are to be coordinated in appearance through application of the Architectural Design Criteria. Material and color selections are to conform to DC 2.6. The existing variations in building materials are to be unified through careful exterior painting techniques incorporating a two color scheme.
- 7. Security fencing should be installed only at the border of visual zone.



Airfield structures can be given a unified appearance by a carefully designed two-color painting scheme.

Service and Storage Zone

SS

Zone Description

The Service and Storage Zone includes all the service areas along Taylor Avenue west of Washington Boulevard; the Post Engineering facilities and repair shops; the large warehouses south of Taylor Avenue; the small warehouses north of Taylor Avenue; and the sewage treatment plant at Harrison Road.

Assets

- The consolidation of all 1. maintenance and storage functions in one contiguous area separate from the main cantonement removes these activities from other areas of the post where they might be disruptive or incompatible.
- The siting of the large warehouses establishes a rigid linear geometry and a strong sense of order for the area. A neat appearance is maintained because the active side of these warehouses is oriented away from Taylor Avenue.

Liabilities

- The existing commissary located in 1. one of the large warehouses is an inappropriate use for this area.
- The smaller warehouse buildings along the north side of Taylor Avenue create a negative impression with parking and loading located in front rather than at the rear of the buildings.
- The view towards the Post Engineering facility from Washington Boulevard creates a

- negative impression with material and equipment storage, chain link fencing, electric substations, railroad tracks and various service buildings not adequately screened.
- The spaces around the warehouses lack any accommodation for workers ("human spaces").

Gateway Boulevard Zone GW

TH Troops Housing Zone

TT Technical Training Zone

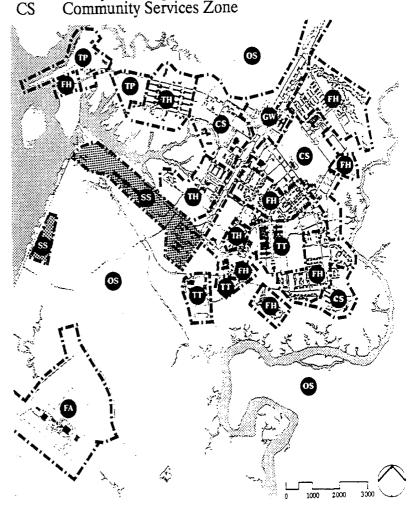
TP Third Port Zone

Service and Storage Zone SS

OS Open Space Zone

Felker Airfield Zone FA

Family Housing Zone FH



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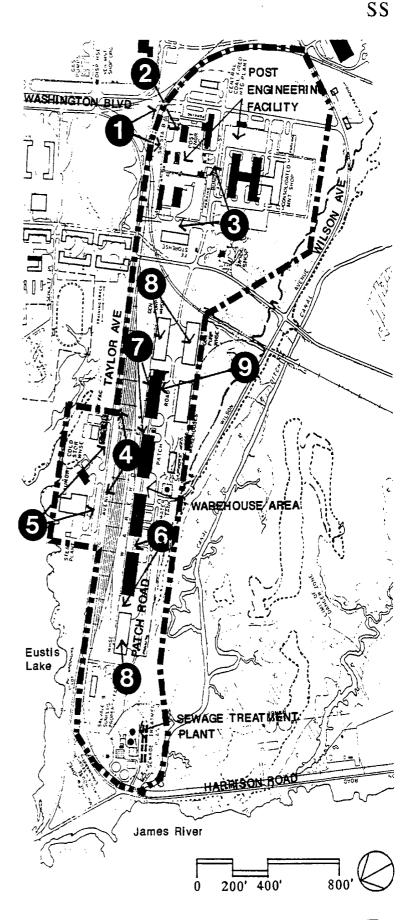
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Service & Storage Zone Engineering & Warehouse Areas

Design Recommendations

- 1. Screen the view towards the Post Engineering/Maintenance Facilities from the terminus of Washington Boulevard. Establish an adequate landscaped setback between the road (Taylor Avenue) and any security fences. Allow the understory growth to develop to better screen the view.
- 2. Reconfigure the existing storage vards as necessary to allow for this landscaped setback from Taylor Avenue. Remove building No. 1420. Maintain min. 100 ft. setback from roadway for all chain like fence. Use landscape planting and earth berms in lieu of plastic strips inserts in chain link fence. (See DC 3.2.3-3.2.4).
- 3. Organize parking along Monroe Avenue and Bundy Street. These streets now function as ad-hoc parking lots for the private vehicles of the engineering/maintenance staff. Designated parking lots, separated from through streets are to be provided. Both Bundy Street and Monroe Avenue should be treated as local access driveways, rather than through streets. (See DC 1.6.0 through 1.7.5).
- 4. Provide a landscaped buffer between Taylor Avenue and the railyard. A planted earth berm is recommended to screen the view along the south side of Taylor Avenue. (See Project No. 8).



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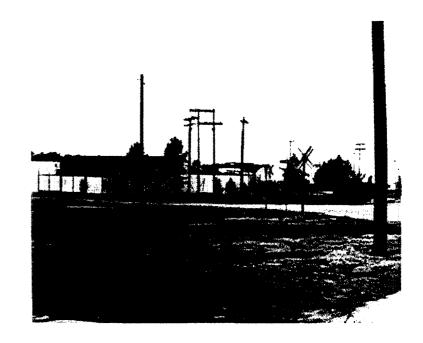
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Visual Zones

Service and Storage Zone

- 5. Remove all parking and loading areas from the shoulder of Taylor Avenue. Loading functions can be performed at the rears of these existing small warehouses. Parking is to be relocated to the sides or rears of the buildings. Other storage uses presently at the rear to be reconfigured to allow space for the loading functions.
- 6. Provide a fence between each warehouse building to better screen from view the storage yards. (See DC 1.9 and DC 2.2.11).
- 7. Maintain the uniform appearance of the existing warehouses (See DC 2.2.11). As painting and maintenance is required, use the material and color selections recommended in DC 2.6.
- 8. New warehouse structures are to be sited to align with the existing buildings. The north face of each building, eave heights and roof lines (slope) are to be matched and aligned. Matching materials are recommended.
- 9. The Commissary should be moved from the warehouse area to the Post Exchange areas as soon as feasible, in order to allow for relocation of small storage buildings now occupying the median area of Washington Boulevard near the Transportation Museum.



The view of utility yards from Washington Boulevard should be screened with landscaping.

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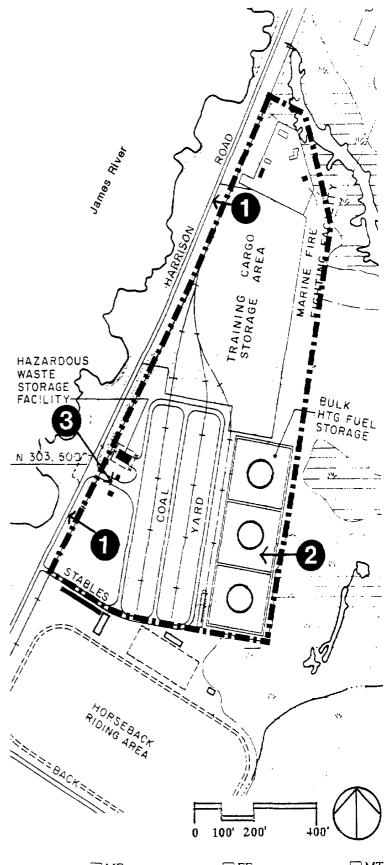
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Service and Storage Zone Harrison Road Area

SS

Design Recommendations

- 1. Maintain min. 75' from road to perimeter security fencing to allow for an adequate landscaped buffer. Add plantings in this area where none presently exist to provide a partial visual screen between Harrison Road and the storage/training areas. Plantings should include large scale trees such as loblolly pines and should be allowed to develop with natural understory growth to provide additional screening with minimum maintenance.
- 2. Expansion of facilities into existing forested areas should minimize the taking of existing vegetation. Where possible, stands of mature trees can be maintained within the cargo area as islands to define the specific functional divisions and to line the access drives.
- 3. Entrance gates are to be maintained as high-visibility areas. Fencing, buildings and parking areas are to be properly sited, neat and orderly. (See DC 3.2.12 and DC 1.9).



Family Housing Zone

FH

Zone Description

NCO and Officer family housing neighborhoods are located in the main cantonment east of Washington Boulevard. Although they are not contiguous, they share many of the same problems and opportunities and will benefit from similar design criteria. The building types include one-story single-family detached housing as well as one and two story attached housing.

Assets

- 1. The housing at Fort Eustis is generally in good condition.
- Nearly all of the housing areas are located adjacent to recreational open space or related community facilities. In some areas, a woodland edge provides an additional amenity for the residential neighborhoods.

Liabilities

- 1. The general appearance of the streetscape in some areas is comprised by the visual clutter of overhead utilities, haphazard on-street parking, and inconsistent landscaping maintenance.
- Certain heavily used thru-streets divide otherwise contiguous housing areas and expose the rear yard areas to public view (i.e. along Madison Avenue from 25th to 28th Streets).

- 3. The quality of the rear yards and patio areas in many areas could be improved. Rear patio areas generally lack individual definition. Personal storage sheds are often poorly located.
- The availability and accessibility to play areas, bike paths, and outdoor neighborhood gathering areas should be improved.

GW Gateway Boulevard Zone

TH Troops Housing Zone

TTTechnical Training Zone

TP Third Port Zone

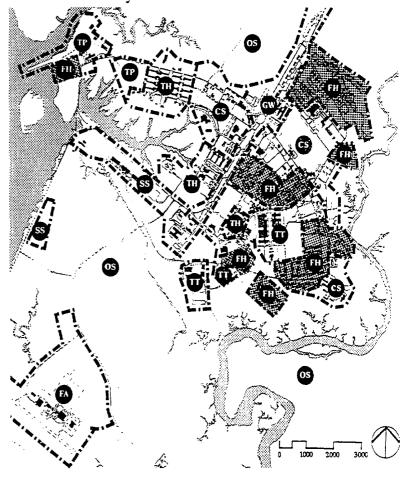
Service and Storage Zone SS

OS Open Space Zone

FA Felker Airfield Zone

FH Family Housing Zone

Community Services Zone CS



Family Housing Zone General Recommendations for All Areas

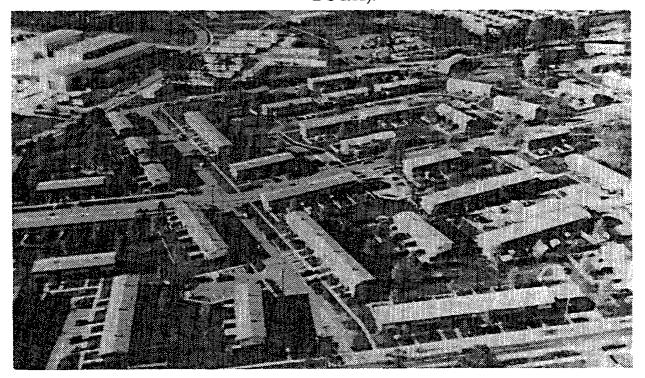
FH

Design Recommendations

Note: Following are recommendations that apply to all areas of family housing throughout the installation. These are prototypical observations. Subsequent pages show more specific recommendations for particular locations.

- 1. Wherever possible relocate overhead utilities underground throughout family housing neighborhoods. Lines may be routed through rear yard areas where this increases efficiency and minimizes conflicts with sidewalks and roadways.
- 2. Replace low pressure sodium highway-scaled light fixtures with a more appropriate residential scaled standard throughout family housing neighborhoods, particularly in courtyard areas. (See DC 5.1).

- 3. Provide additional landscaping and/or low wooden fencing at fronts of units to screen the view of the mechanical equipment (A.C./heat pump unit), mechanical access door, and utility hookups (gas and electric metering).
- 4. Improve individual definition of rear patio areas by provision of appropriate landscaping and/or low fencing where needed. Standard patio pavers are also recommended. (See DC 3.5.2).
- 5. Rationalize parking areas. Avoid on-street perpendicular parking, especially in areas of new development. Where feasible, convert through streets to local access driveways with designated parking areas. Parking aisles may be reduced to 60 ft. widths in some locations to provide additional lawn areas. (See DC 1.7.1, DC 1.7.2 and DC 1.11).



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Family Housing Zone Jefferson Ave./Madison Ave. Vicinity

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Design Recommendations

Note: See also General Recommendations for all areas of family housing (preceding page). Following are additional recommendations for this particular areas of the installation.

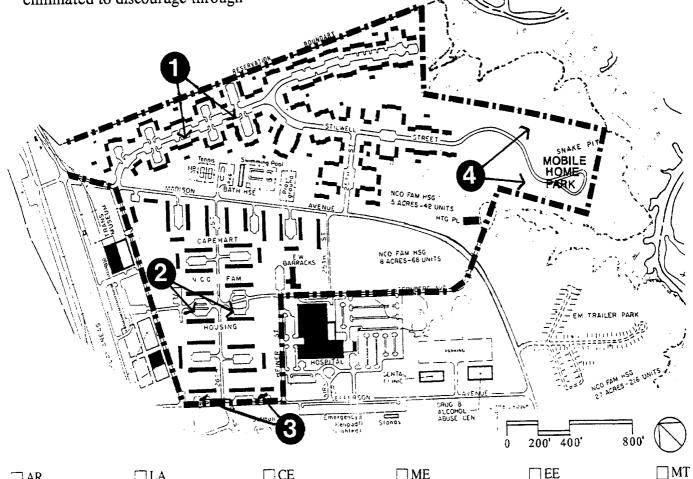
- 1. Improve image of Stillwell Street by rationalization of the parking and circulation layout. Where space permits separate parking from the street. Avoid perpendicular on-street parking.
- 2. Organize parking areas along Sternberg Avenue. This street can be converted from a through-street to a local access drive linked only to 26th Street. Connections with Heiner and 28th Streets can be eliminated to discourage through

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traffic and allow a more efficient layout of parking in these areas.

- 3. Increase the setback distance for the residential parking lots along Jefferson Avenue. Total width of these single-loaded parking aisles may be reduced to 40 ft. (18' deep parking stalls, with 22' moving lane). Additional space between the parking lot and road is to be used for street trees.
- 4. The Mobile Home Park planned for the extended Stillwell Street area is to be planned to minimize clearing of existing forest. Stands of existing trees can be maintained as clusters of natural forest growth within the planned area. Care must be taken to maintain existing grades and protect roots from damage by construction vehicles.



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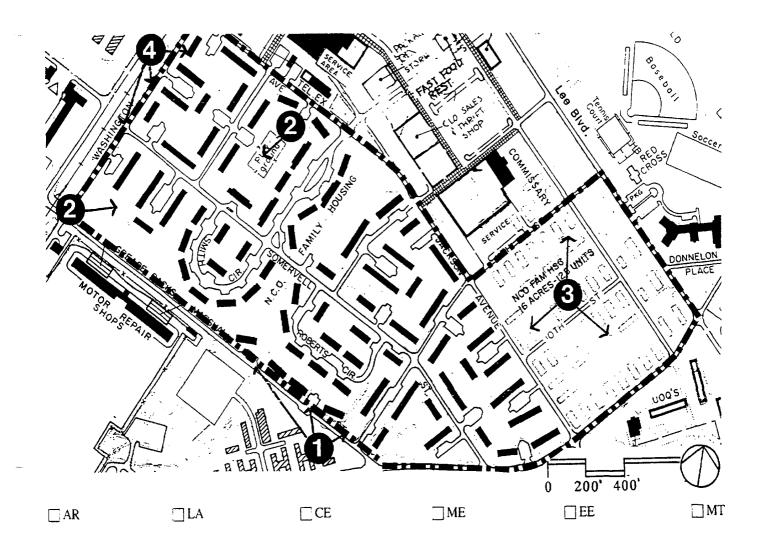
Family Housing Zone Jackson Avenue/Marshall Road Vicinity

Design Recommendations

Note: See also General Recommendations for all areas of family housing (preceding pages). Following are additional recommendations for this particular area of the installation.

1. Separate residential vehicular traffic and parking from the troop-movement function of Marshall Road. Minimize conflicts with regimented troop movements along Marshall Road by developing an access driveway at residential parking areas which is separated from the proposed troop pathway. (See Project No. 3).

- 2. Provide appropriate play/ recreation equipment within the housing complex in accordance with the Site Furnishings design criteria. Emphasize the use of natural materials such as timber structures.
- 3. New development to be planned with a clear circulation scheme coordinated with circulation and parking at the PX area.
- 4. Remove open ditch drainage from the edge of Washington Boulevard. Replace with piped underground drainage system to improve the quality of these front yard areas.



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Family Housing Zone Wilson Avenue/Pershing Avenue Vicinity

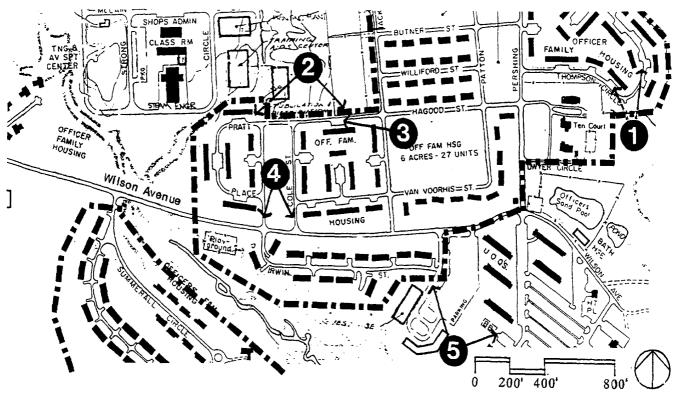
Design Recommendations

Note: See also General Recommendations for all areas of Family Housing (preceeding pages). Following are additional recommendations for this particular area of the installation.

- 1. Improve the image of Thompson Circle by adding street trees (providing overhead utility lines are not in the way, or have been properly relocated below ground). Where space permits, relocate on-street perpendicular parking to off-street parking areas.
- 2. As new training facilities are developed, maintain adequate landscaped setbacks along Jackson Avenue, Hagwood Street and at rear yard areas at Pratt Place. A minimum of 30 ft. is recommended for fences or buildings along

Hagwood Street and Jackson Avenue.

- 3. Improve condition of on-street perpendicular parking along Hagwood Street or relocate this parking off-street in a separate parking lot.
- 4. New development is to be planned to avoid closely spaced redundant streets, such as Cole and Irwin Streets. One of these intersections with Wilson Avenue may be eliminated.
- 5. New UOQ development adjacent to single-story officers housing along Irwin Street must be sited to allow adequate separation from these existing units. Separate parking and access from Irwin Street, connecting instead with the foot of Pershing Avenue and/or Wilson Avenue.



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Open Space Zone

OS

Zone Description

This visual zone includes the woodland and wetland areas, the golf course, riverfront, range areas, and field training areas, including the range area. 2. While the picnic areas along the James River are well maintained, whitewashing of trees and rocks results in a rather awkward and unnatural appearance.

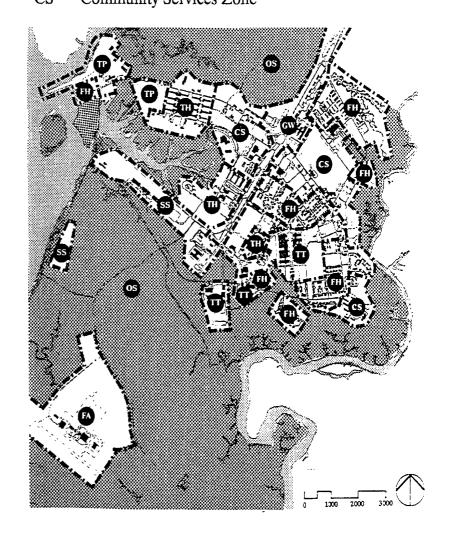
Assets

- 1. The lush forests and scenic estauries provide a rich natural setting for the post and provide buffers between the various functional areas.
- 2. Eustis Lake is a valuable recreational asset and natural resource.
- 3. Harrison Road provides spectacular views across the water to the James River Fleet. The small picnic areas along the water's edge are valuable recreational facilities.
- 4. The winding roadways passing through the woodland areas are well maintained with the forest edge held close to the roadway and mowed areas minimized. These picturesque passages through the forest are an important part of the overall image of Fort Eustis.

Liabilities

1. The siting of the proposed causeway storage area may require clearing the forest in that area so that the causeway equipment will be visible from the airfield.

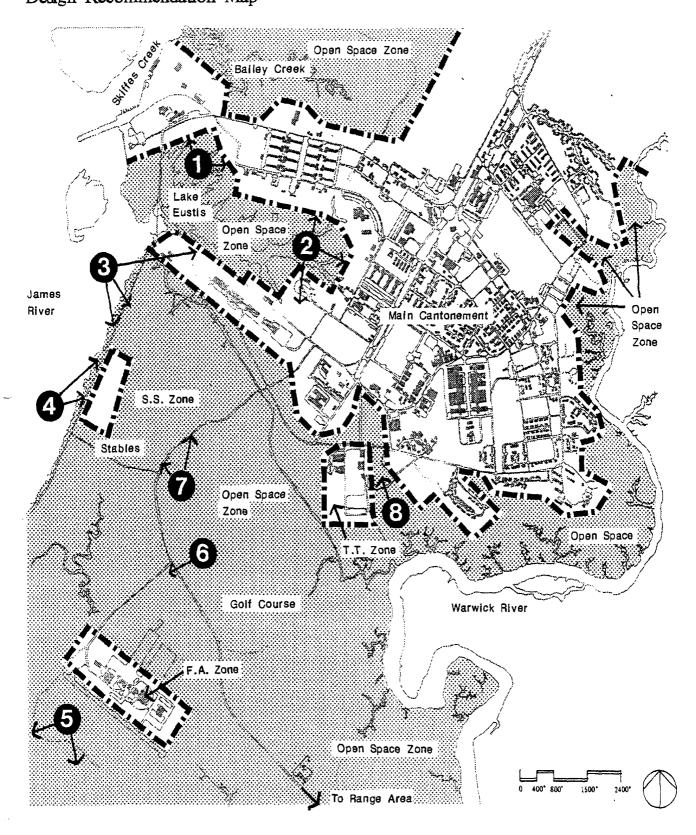
GW Gateway Boulevard Zone TH Troops Housing Zone TTTechnical Training Zone TP Third Port Zone SS Service and Storage Zone OS Open Space Zone FA Felker Airfield Zone Family Housing Zone FH CS Community Services Zone



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Open Space Zone Design Recommendation Map

OS



Open Space Zone

Design Recommendations

- 1. Maintain edge of forest surrounding Eustis Lake. New development in the Motorpool/800 block vicinity is to be carefully sited to maintain adequate setbacks from the lake so that the line of tall trees is not interrupted. The image of Eustis Lake as seen from Taylor Avenue is to be of a completely "natural" basin with surrounding development hidden from view by natural forest growth. A 100 ft. minimum depth is recommended for the forested perimeter of the lake.
- 2. New development west of Monroe Avenue and in the existing aircraft mock-up areas is to follow the above criteria as well. New buildings planned for this area must be properly located to maintain adequate setbacks from the edge of the lake and its estuaries so that a strip of natural forest growth remains between the lake and the developed area. A 100 ft. minimum depth is recommended for the forested perimeter of the lake.
- 3. Running as physical training is important at Ft. Eustis. Therefore, designated running routes, such as Harrison Road and Taylor Avenue are to have running paths along side the roadway. Presently, this activity takes place in the vehicular lanes and on the narrow gravel shoulder of the roadway. A 6 ft. wide running path is recommended for Harrison Road and Taylor Avenue as part of an overall post-wide system of running trails to better support the physical training activities. Paving material to be bituminous or crushed gravel paths. (See DC 1.4.1, DC 1.5.6).

- 4. Upgrade appearance of riverfront picnic, parking and scenic-overlook pull-off areas. Painting of tree trunks, rocks and the like must be forbidden. Site furnishings are to follow the Design Criteria (See DC 4.0 through DC 4.2). Use of natural materials such as wood bollards and wheel bumpers is recommended to better define extent of parking areas. (See DC 1.7.2).
- 5. Clearing and logging operations are to be planned so that existing edges of forest are maintained intact, while the area to be cleared is held back 50 ft (min.) from the forest edge. This is particularly important for the edge of the forest as seen from Felker Airfield. The Causeway Maintenance/Storage Area must be sited to allow a strip of forest growth 50 to 100 ft wide to remain on its northern perimeter, separating that clearing from that of the airfield.
- 6. Landscape screening is to be placed around the existing fuel tanks at the Mulberry Island Road/Cardon Road intersection. As replacement or expansion of this facility becomes necessary, it should be moved further away from the roadways in order to reduce its visibility and allow for a more adequate landscaped buffer area.
- 7. Mulberry Island Road links the main cantonement with the range areas and is a part of the overall running path system. A running path or troop movement path is recommended for this route. (See DC 1.4.6, DC 1.5.5, DC 1.5.6 and DC 3.4.3).

Open Space Zone

8. New development planned for the Browns Lake area must be carefully sited to maintain adequate setbacks from the edge of the lake. A 100 ft. (min.) strip of natural forested area must be allowed to remain around the perimeter of the lake. New structures, parking lots, equipment areas, roadways and fences are to be located so as not to be visible from Service Road.



Maintaining the forest edge is important along high visibility areas, such as Mulberry Island Road.

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Community Services Zone

CS

Zone Description

Community support facilities are scattered throughout the post within housing and barracks areas, as well as in the large Community Center area itself, which includes the Post Exchange area, the Anderson Field House, surrounding athletic facilities, the theater, the swimming pool and the NCO/Enlisted Club.

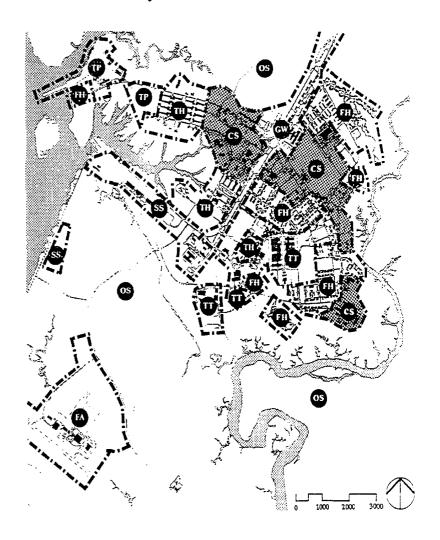
Assets

- 1. The concentration of major community support functions in one central location flanking Hines Circle provides an identifiable Community Center for the post.
- 2. The development of the Post Exchange area has been based on a strong organizational principle involving a central shared parking area surrounded by various related facilities.
- 3. Outdoor recreational areas located along the waterfront or in the lush woodland areas enjoy the benefits of the rich natural setting of Ft. Eustis.

Liabilities

1. The rear of Anderson Field House creates a negative image when seen from Washington Boulevard. The above ground steam lines in this area also detract from its image.

GW	Gateway Boulevard Zone
TH	Troops Housing Zone
TT	Technical Training Zone
TP	Third Port Zone
SS	Service and Storage Zone
OS	Open Space Zone
FA	Felker Airfield Zone
FH	Family Housing Zone
CS	Community Services Zone



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Community Services Zone

CS

- 2. The parade ground at Murphy Field lacks visual definition at its edges. The two illuminated athletic fields at either end seem to be an intrusion into the space.
- Access to the Post Exchange 3. parking area is not well defined. Access from the in-bound lanes of Washington Boulevard follows a circuitous route turning onto Lee Boulevard or to Jackson Avenue. In addition, Patton Avenue, which is a remnant road in this area, leads through traffic into the parking area.
- Tyler Avenue is a remnant road west of Washington Boulevard. It leads traffic through the parking areas of Anderson Field House and the NCO-Enlisted Club. In addition, it subdivides what would otherwise be a large single open space west of 18th Street.



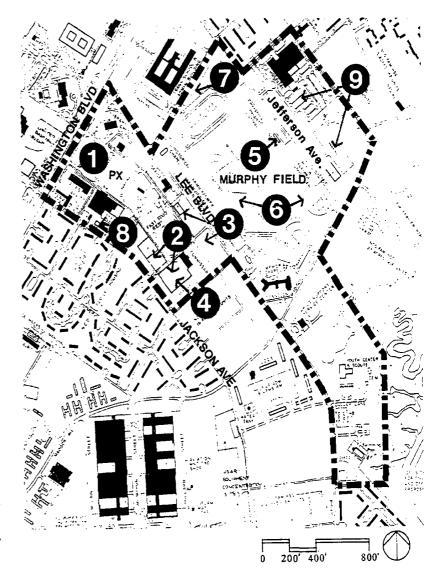
The Post Exchange area functions much like a commercial shopping center.

Visual Zones

Community Services Zone East of Washington Boulevard

Design Recommendations

- 1. The Post Exchange complex is to be organized around a central shared parking field with a simple clear circulation pattern. Each individual new building must not further subdivide the parking and confuse the circulation. Patton Avenue is to be eliminated as a through street which now adds unnecessary traffic to the parking area. Clearly marked access points are to be established at the perimeter of this complex at Lee Boulevard, Washington Boulevard and Jackson Avenue. (See DC 1.7.3).
- 2. New development in this area, including the proposed commissary, is to be designed to complete the overall parking and circulation concept with a single shared central parking field with a clear and simple circulation pattern leading traffic past the building entrances. This area is to be planned as if it were a high quality commercial retail center.
- 3. Existing parking lots which lay adjacent to the PX area are to be incorporated as part of the overall parking and circulation scheme. For example, the small lot at the Library should be separated from Lee Boulevard by a 20 ft. wide planted strip, and accessed through the central PX parking field. In this way access to the entire complex of Community Facilities is to be directed to a few clearly marked intersections along the major roadways. A single loop road encircling the parking field within the PX complex is to provide access to all the parking areas. (See DC 1.7.3).



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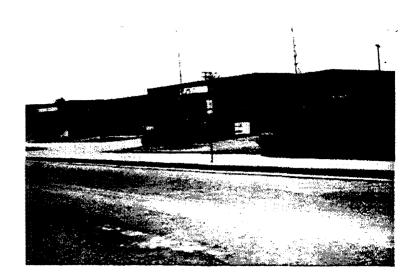
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CS

Community Services Zone East of Washington Boulevard

- 4. All new development in the PX vicinity is to conform to these Architectural Design Criteria. Material and color selections are to be consistent throughout the complex. Brick color is to match the existing Post Exchange Building. (See DC 2.6).
- 5. Upgrade the Murphy Field review stands according to the Architectural Design Criteria (See DC 2.2.11). Improve the driveway approach and review stand parking area providing a VIP drop-off point, defined edges to the parking aisles and landscaped areas. (See DC 1.10 and DC 3.4.6).
- 6. Establish a visual frame to enclose the formal parade ground of Murphy Field. Plant a formal double row of trees around the rectangular perimeter of the parade ground, allowing the lighted athletic fields to remain outside. See DC 3.4.8 and DC 3.4.9).
- 7. Add landscaped islands to the parking lot east of Walker Street at the Transportation School Building. Increase the setback from Walker Street to create a 15' wide planted area. Maintain a 60' wide parking aisle (18' deep parking stalls, 24' moving lane, See DC 1.7.1). Additional width is unnecessary for normal passenger car parking.
- 8. Improve visual screening at PX loading area, as seen from Jackson Avenue and the family housing neighborhood to the south. Utilize indirect driveways, trees, planted earth berms and fencing. See DC 3.2.11.

9. Parking and circulation surrounding the Hospital is to be rationalized. Portions of the steam line system are to be placed below ground to alleviate conflicts with vehicular circulation and allow for a clear and simple circulation pattern to be developed. Access roadways should be kept separate from parking fields so that visitor staff and patient traffic can be properly directed. Presently, the Hospital/clinic complex has a confused system of entry driveways. This issue will become increasingly important as new facilities are developed.



The Post Exchange building.

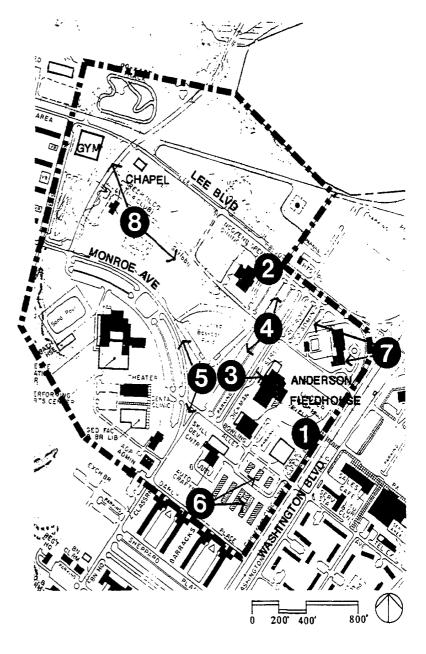
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Visual Zones

Community Services Zone West of Washington Boulevard

Design Recommendations

- 1. Realign inbound lanes of
 Washington Boulevard from Hines
 Circle to Darcy Place and plant
 street trees along the west side of the
 boulevard to define the edge of the
 athletic fields and screen the view
 towards the rear of the Anderson
 Fieldhouse.
- 2. The new NCO club is an excellent example of architectural design and material/color selection. It should be seen as a prototype for all new smaller scaled buildings located in this visual zone. Note: One exception should be made, however. Standard-sized brick units are to be used; not jumbo-brick or econo-brick units. (See Architectural DC 2.6).
- 3. Improve the appearance of Anderson Fieldhouse main entrance. Improvements should include upgraded signage, entrance walkway, re-aligned curbing at drop-off, etc. (See Project No. 7).
- 4. Add planted islands and improve circulation patterns within Anderson Fieldhouse, including the area north of Tyler Avenue. Plantings should help minimize the awkward appearance of the elevated steam lines by incorporating them into planted islands with medium-sized ornamental trees. Tyler Avenue should be treated as an access driveway to the parking field, rather than a through street. The large monotonous areas of parking should be scaled-down with lines of planted islands with shade-trees. (See Project No. 2).



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Community Services Zone West of Washington Boulevard

Club. Future development in this area is to be planned to fully utilize the entire ground area from Lee Boulevard through to Monroe Avenue, uninterrupted by remnant street patterns. The proposed chapel and gym should be designed to provide a transition from the architectural style of the CS Zone to the style of Troop Housing around Cameron Place. The existing stand

of trees near the Anderson

should be preserved.

Place/Monroe Avenue intersection

- 5. Provide a system of troop movement pathways linking the major troop destinations. Monroe Avenue is to be a major route leading to the barracks complexes at Sheppard Place and at Cameron Place as well as the airfield. The 12' wide troop pathway is to be located along side Monroe Avenue to alleviate existing conflicts caused by vehicular traffic passing through areas used by foot soldiers.
- 6. New development to replace existing semi-permanent buildings south of Jackson Avenue is to be designed in conformance with the architectural design criteria to maintain continuity with the overall theme for the Community Facilities Zone. Existing buildings should be painted (as needed by normal maintenance schedules) with colors conforming to the architectural DC. (See DC 2.6).
- 7. Access to the Welcome Center is to be re-routed to eliminate the awkward turn immediately south of the Hines Circle. The Tyler Avenue intersection is to be used as the approach to the building entry. The service area on the southeast side of the building is to be screened with additional landscaping and an indirect driveway alignment. Rooftop mechanical equipment is to be screened with architectural roof features. Ground-mounted mechanical equipment, dumpsters, pole-mounted transformers and chain-link fencing is to be screened with plantings and earth berms as appropriate. (See DC 3.2).
- 8. Tyler Avenue is to be eliminated as a through street west of the NCO



Washington Boulevard is to be realigned and street trees planted near Anderson Fieldhouse.

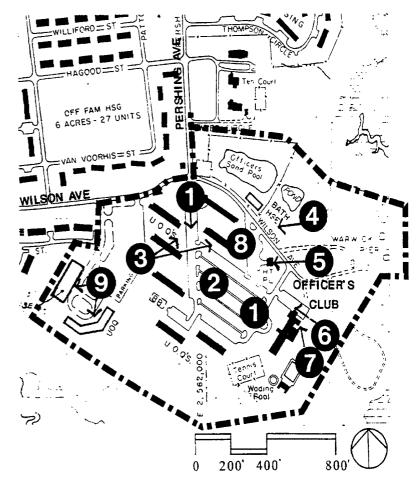
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Community Services Zone Officers Club Vicinity

Design Recommendations

- 1. Improve the approach to the Officers Club entrance from Pershing Avenue. Create a discrete driveway leading along Pershing Avenue to the cul-de-sac at the Officers Club entrance. This driveway should be separated from parking areas and planted with street trees on both sides of the drive to create a boulevard effect for the approach. (See Project No. 1). Remove some of the head-in parking along Pershing Avenue.
- 2. Subdivide the large parking field at the end of Pershing Avenue to define separate parking fields for residential use and for Officers Club/Sand Pool use. This can be accomplished by adding planted islands and modifying the circulation pattern. (See Project No. 1).
- 3. Relocate certain portions of the steam line system below ground. Of primary concern are the lines visible from Pershing Avenue at the UOQ buildings. This is the gateway to the Officers Club/UOQ complex and should be treated as a high-visibility area.
- 4. Organize the parking areas around the Sand Pool. A portion of these parking areas may be paved, while other portions may be turf areas designated as overflow parking. In both cases, the extent and orientation of parking must be defined. Use 60' wide parking aisles (18' deep spaces each side and a 24' moving lane). For turf areas used for peak demand, define edges with wooden bollards and railroad tie edges. (See DC 3.2.13).



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Community Services Zone Officers Club Vicinity

- 5. Provide additional landscape screening at the existing steam plant. Screen service access area from the view from Wilson Avenue and the Officers Club parking lot. (See Project No. 1).
- 6. Provide additional landscape screening at the kitchen service area of the Officers Club. Re-route the access driveway to avoid a direct view to the loading area from the approach drive.
- 7. Provide architectural screening of rooftop mechanical equipment on Officers Club building. Relocate electric service or add plantings to screen view of existing pole mounted transformer and wires at the building.
- 8. As exterior renovations or insulation improvements are required for existing UOQ buildings, follow the architectural Design Criteria included in this manual. Patterns of fenestration are to be carefully considered to provide suitable proportions. Window air conditioner units are to be avoided wherever feasible. Exterior finish materials are to conform to DC 2.6 and should match the Officer's Club. Tan stucco (insulation system) with brick wainscotting is recommended. Standing seam dark brown metal roofing is to be used on all sloped roof areas.
- 9. New development planned west of the existing UOQ's should be sited to maintain existing forested areas where possible. Stands of existing trees can be preserved as planted islands within the new parking lot. Maintain both the trees and their natural forest understory growth.



Steam pipes at UOQ's present a poor image and are obstacles to better use of the grounds.

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Introduction

GW TH TT TP SS OS FA FH CS

Topography

Fort Eustis is located on the Virginia Penisula, along the eastern shore of the James River. It is near metropolitan areas that have had a history of agricultural and military activities. Approximately 80% of the installation perimeter is bounded by water, and much of it consists of existing woodlands and marsh.

The average elevation is 20 feet above mean sea level, and the land throughout the post is generally low and level with no nearby hilly areas. Topographic elevations generally range from 10 to 40 feet above sea level, with higher elevations within the main cantonment ranging from 30 to 40. Developed areas are generally level, surrounded by lower march areas and river banks.

Soil erosion is generally not a problem within developed areas, except for specific open ditch drainage areas and unpaved heavily used pedestrian areas. It is recommended that preventive measures be taken for any proposed development during and after construction. Installation areas with slopes 5% or greater should not be developed if possible but reserved for training purposes which would mostly apply to the cantonment edges along Skiffes Creek and on Warwick River edges where housing, recreational and Third Port training areas are located.



Most of the cantonment is level throughout.



Outlying areas should be carefully developed; prohibit development in low-lying marsh areas.

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1. Site Planning

Design for Climatic Condi

Provide protection from rain at building entrances. Provide positive drainage to minimize freezing rain along pedestrian walkways and roadways.

Provide adequate storm drainage to protect excessive soil erosion during periods of heavy rains. Provide curbs and catch basins in areas of severe erosion. Open ditches should be buried, using piping and culverts to minimize soil erosion in these areas as well.

Temperature Range

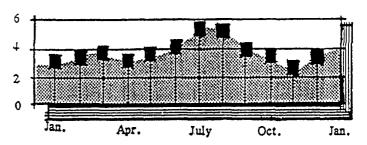
Promote natural ventilation through operable windows or economy cycles for HVAC systems in spring and fall. See TM 5-785 for engineering heating/cooling requirements.

Solar: Latitude 37°08'

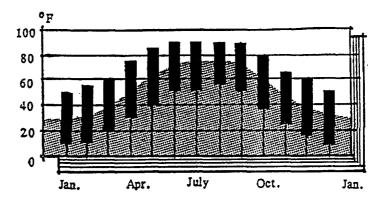
Heat gain through walls and glazed openings should be minimized in summer, but where possible promoted in winter. Take advantage of seasonal changes in altitude of the sun to achieve this in the design of window openings.

Provide shading from hot summer sun by planting large deciduous trees on the south and west sides of buildings and pedestrian areas. Use the solar angle data to predict extent of shading.

GW TH TT TP SS OS FA FH CS (1 of 2)

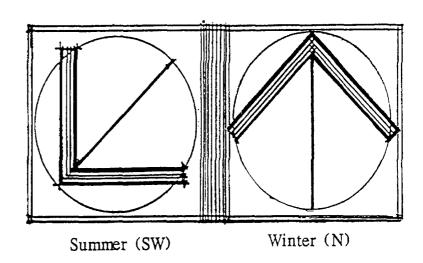


Precipitation (inches/month, mean.)



Temperature Range Degrees F.

Source: TM-5-785 / p.3-255



Prevailing Winds

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1.Site Planning

Design for Climatic Conditions

GW TH TT TP SS OS FA FH CS (2 of 2)

Temperature

The climate of Fort Eustis is a modified continental one with warm, humid summers, with occasional cool periods due to easterly winds off the Atlantic, and mild winters. The climate of the area is affected by the location of the post near water creating a marine type climate. The average mean temperature is 58.5 degrees F. The coldest temperatures occur in January ranging from 20 degrees to 40 degrees F, and seldom reaching zero or below. Summer temperatures seldom reach 100 degrees or above. Spring and autumn weather is generally mild and pleasant with the killing frosts occurring at the end of October.

Precipitation

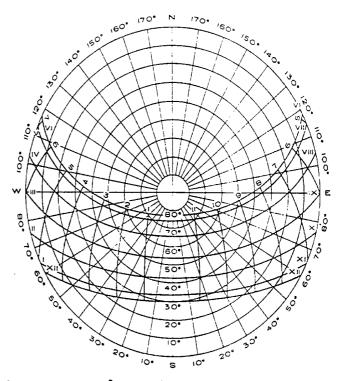
Rainfall is usually uniformly distributed throughout the year with monthly variability. Occasional dry periods occur in autumn lasting several weeks. Snowfall is light in the region and generally melts within 24 hours. Flooding is a possibility during summer and early autumn from hurricanes and tropical storms bringing record rainfalls. Tornadoes are infrequent but have been sighted in the area.

Wind

Wind direction is variable. In winter, the prevailing wind is from the north and in summer from the south-southwest.

Microclimate

Variations in mirco-climate occur in temperature, wind velocity, light, and humidity. Forested areas differ in all



Solar Path for 37° N Latitude

these factors from developed areas with resulting increased run-off and higher velocity winds in open developed areas. Where winter wind is strong under micro-climate conditions, provide wind breaks where possible with tall evergreen plantings.

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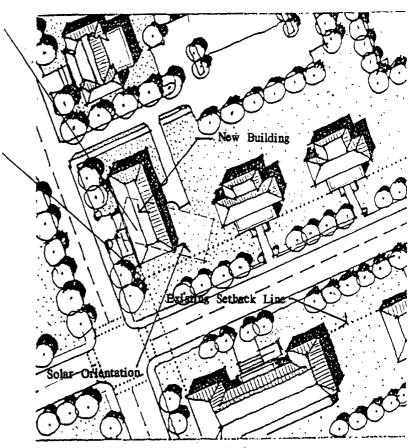
Building Orientation/Siting

GW TH TT TP SS OS FA FH CS

General Notes

- Orientation of buildings parallel to street should take precedence over irregular solar orientation in siting. An energy efficiency study may be required to permit siting to occur when building is beyond 10 degrees off the east-west axis.
- Set back the building so that its facade plane is aligned with other buildings on the same street.
- Where more than one street grid pattern exists, choose the most important frontage to orient the building.
- Spaces between buildings will be regularly shaped rectangles, which are therefore more useful for parking and service areas.

Note: DOD regulations require all new buildings to be oriented with the broad side within 15 degrees to 20 degrees of due east-west. In general, this may lead to energy savings in buildings with certain massing proportions. However, in many circumstances, specific analysis of the actual design may indicate site development in efficiencies resulting from the awkward orientation where prevailing street grids and existing adjacent buildings are oriented otherwise. Moreover, other measures may be taken in the specific building design to optimize energy efficiency, such as shading devices at window openings, coordination of deciduous tree plantings, overall building envelope massing and certain types of skylighting. This type of analysis is strongly recommended so that buildings are oriented according to the solar guideline (i.e. 15 degrees to east-west) only when it is clear that this will indeed be effective for the actual building design. If solar orientation will not significantly affect the particular building, then it should be oriented squarely with the street or existing building grid.



Solar Orientation can cause design inefficiencies in existing built-up areas with strong orthogonal street grids.



Orientation of buildings to the street has been the tradition at Fort Eustis.

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1.Site Planning

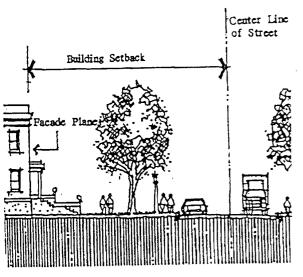
Building Setbacks

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Minimum Required Building Setbacks

Any new building or addition is to be located so that its facade plane is set back from the street centerline the following minimum distances. In existing built-up areas the setback requirement is intended to reflect the prevailing existing setbacks. In general, new buildings in these areas should be aligned with adjacent existing permanent structures. Follow this procedure.

- 1. Check the minimum setback required.
- 2. Compare with existing permanent adjacent buildings on both sides.
- 3. If there is a significant difference, and if the existing buildings are to remain then conform to existing conditions after verifying with the DEH.



Recommended Minimum Building Setback	
Washington Avenue	
Main Gate to Hines Circle	150 ft.
Transportation Museum Area	100 ft.
Hines Circle to Taylor Avenue	100 ft.
Lee Boulevard	
West of Washington Boulevard	100 ft.
East of Washington Boulevard	
PX Vicinity	50 ft.
Madison Avenue to Wilson Avenue	
Residential	75 ft.
Taylor Avenue	
West of Washington Boulevard	100 ft.
East of Washington Boulevard	75 ft.
Monroe Avenue	
800 Block Area - Southside	75 ft.
800 Block Area - Northside	100 ft.
Jackson Avenue to Pearl Street -	
Westside	50 ft.
Jackson Avenue to Pearl Street -	
Eastside	75 ft.
Harrison Road	100 ft.
Kerr Road	50 ft.
Kells Drive	50 ft.
Stillwell Street	50 ft.
26th Street	50 ft.
Somervell Street	50 ft.
(All other family housing	50.5
neighborhood streets)	50 ft.
Jackson Avenue	ac c
West of Washington Boulevard	75 ft.
East of Washington Boulevard	75 ft.
Patton Avenue	75 G
West of Washington Boulevard	75 ft. 50 ft.
Washington Boulevard to 11th St.	50 II.
(i.e Post Exchange Parking	
Lot area)	75 ft.
11th Street to Wilson Avenue	/3 IL.
(Relocate street as required	
for new housing Wilson Avenue to Voorhis Street	50 ft.
	JO 16.
(Residential)	75 ft.
Marshall Road	100 ft.
McMahon Street (align with exist.)	100 ft.
Bullard Street (align with exist.) McLain Street (align with exist.)	100 ft.
Wilson Avenue	100 ft.
Mulberry Island Road	100 ft.
Condon Road (Felker Airfield)	100 ft.
Back Creek Road	100 ft.
Dack Clock Ivodu	100 11.

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Barracks Complex Siting New Buildings

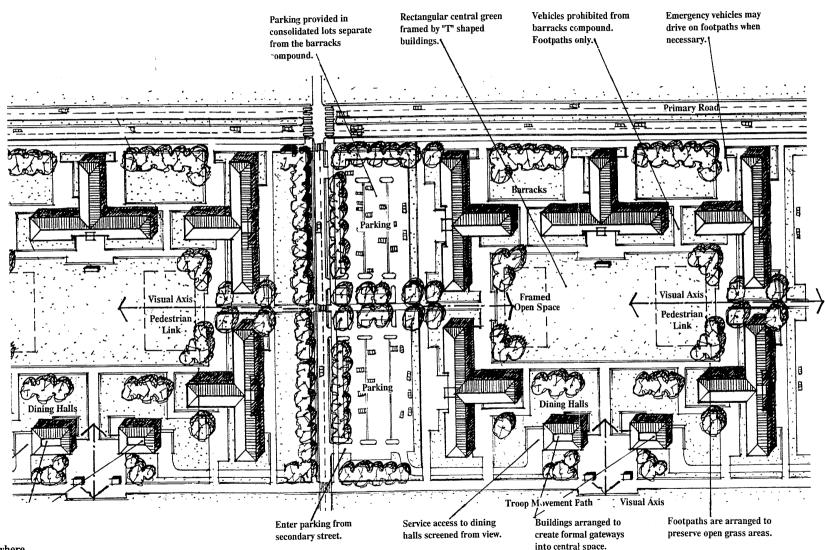
Future development of enlisted barracks are to be three-winged buildings, according to the current Army-wide prototype design. When locating each of these buildings, great care must be taken to shape the remaining ground area to create usable outdoor "rooms", which will be useable spaces for troop activities.

Rectangular spaces are best and allow for the most efficient use of the total site area.

The total complex of buildings is to be arranged to create a formal composition, enclosing or framing a rectangular central "Quadrangle" space.

Troop Pathways are to link together the compound, connecting the Troop mustering areas.

Open areas between buildings also serve as gateways or portals leading into the central quadrangle or leading out of the complex to other areas of the post. The pedestrian system and vehicular circulation system should be arranged to take advantage of these portals as formal points-or-arrival for VIP's. In this way, the entire complex should have one signle fe:mal point of arrival, which is to be front-and-center.



Note:

These design principles can also be applied where $"Y"\ shaped\ barracks\ buildings\ are\ planned.$

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1. Site Planning

Existing Roadway Classification System

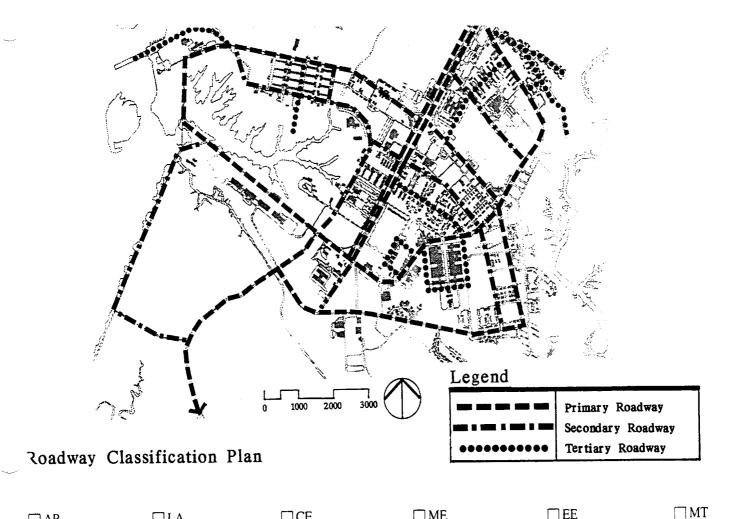
The network of roadways at Fort Eustis establishes a strong spacial organization, and to a large extent, determines how one sees the installation as one moves through it. The roadway network at Fort Eustis focuses on Washington Boulevard. All traffic flowing in and out of the post must travel along this spine making this the most highly visible area of the post. The two most important intersections are Lee Boulevard and Taylor Avenue. Lee Boulevard and Taylor Avenue extend outward linking the various areas of the contonment to the central spine. Other secondary roads intersect with Washington Boulevard and in some instances are redundant and should be eliminated (i.e., Tyler and Patton Avenues). In the future Monroe Avenue is proposed to carry some of the volume of traffic currently using

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Washington Boulevard. The second access road will connect approximately across the street from the Recreation Center. Also, with the new barracks complex, Monroe Avenue will connect with Mulberry Island Road.

Madison Avenue carries a heavy volume of traffic through housing areas during evening peak hour. This traffic views the backs of houses along Stillwell Street and separates the housing area. An effort should be made to divert traffic away from Madison Avenue so that it does not pass through an otherwise contiguous housing neighborhood. With the construction of the new Commissary in the Community Service area, Jackson Avenue should be de-emphasized as a through-street.

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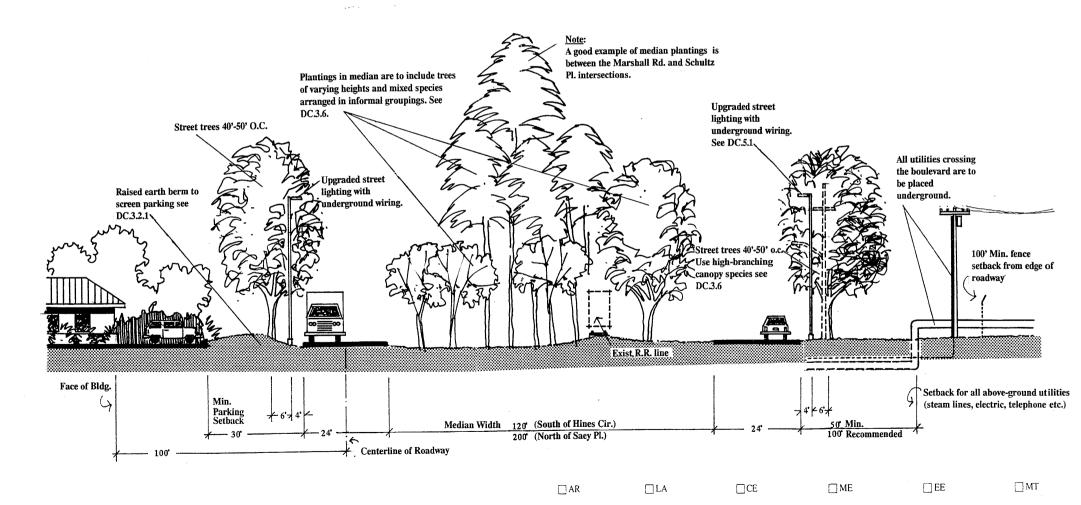
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Roadway Section Washington Boulevard

The most important roadway on the post is certainly Washington Boulevard. It is the central spine and the arrival corridor for the entire installation. Because it has been carefully landscaped in certain areas, it now has the character of a green parkway. This parkway treatment is to be extended to include the entire length of the boulevard.



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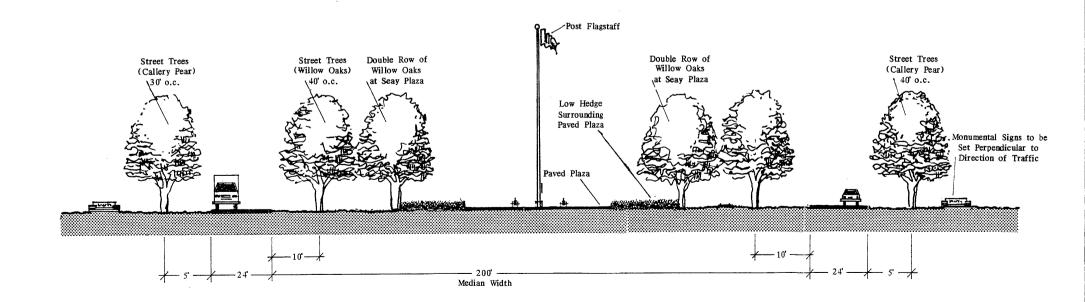
1.Site Planning

Roadway Section Washington Boulevard at Seay Plaza

Seay Plaza is certainly the most visually important formal open green space at Fort Eustis. It occupies an important position lying between two major buildings flanking each side of Washington Boulevard, the Post Headquarters Building and the Transportation School and Administration Building. The plaza green is the site of daily flag ceremonies as well as special small group awards ceremonies. It is now one of the most carefully manicured lawn areas and deserves continued care. With the removal of the warehouse buildings from the area to the north, an opportunity exists to complete the frame of canopy trees enclosing the plaza. This design criteria specifies placement and species selection. See also Project Section.



Seay Plaza is a special ceremonial place, and a highly-visible point along Washington Boulevard.



Roadway Section Primary and Secondary Roads

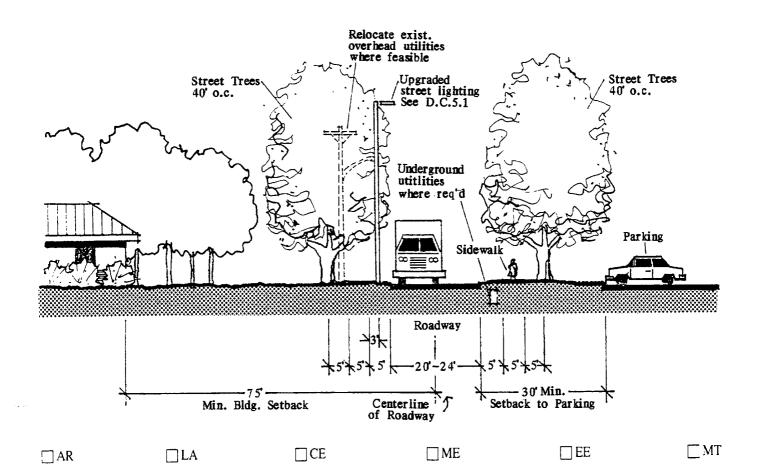
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This design criteria applies to most Primary and Secondary roads, including for example the following locations:

- Lee Boulevard (west of Washington Boulevard)
- Jefferson Ávenue
- Madison Avenue
- Pershing Avenue
- Patton Avenue
- Jackson Avenue



Jefferson Avenue is a good example of a tree-lined roadway.



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Roadway Section Primary and Secondary Roads With Troop Movement Pathway

This design criteria applies to Primary and Secondary roads which handle both troop movement and large traffic volumes. A troop movement pathway is used in lieu of a sidewalk on one side. See DC 3.4.3, 3.4.4 for details. This treatment is recommended for the following locations:

- Monroe Avenue (Lucas Place to Shulty Place)
- Goodman Road

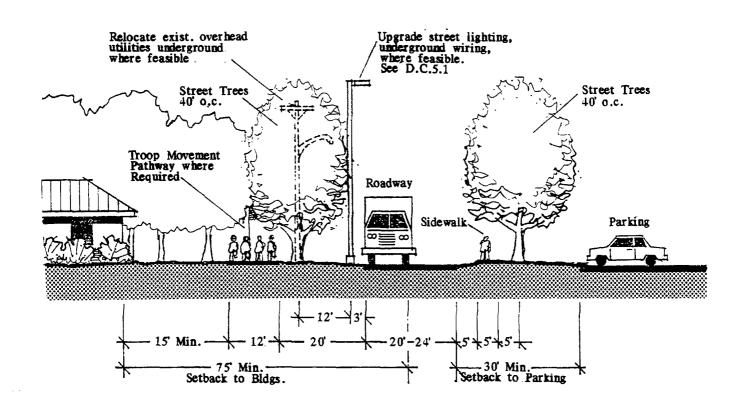
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Troop movements are of critical importance at Fort Eustis.



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Road Section Taylor Avenue

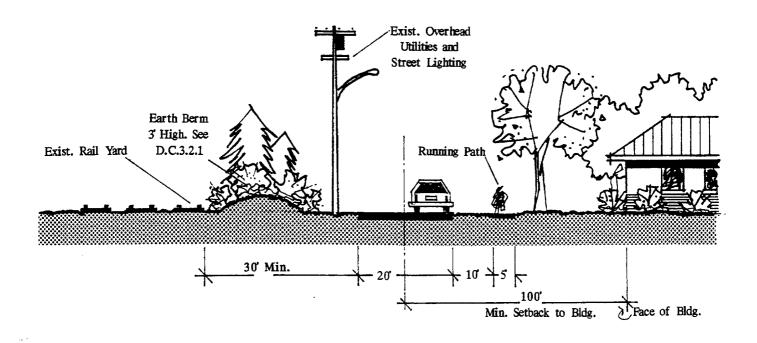
TH SS

Taylor Avenue is one of the post's primary roads and a major route to the Third Port and riverfront. This design criteria recommends a planted berm along the edge of the road to screen the view of the rail yard and warehouses. The alignment of the road should also be straightened to be consistent.

A running path should be added along one side of the road, since this is a major route on the physical training circuit.



Landscaping and berming along the edge of the rail yard will improve the appearance of Taylor Avenue.



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Roadway Section Primary and Secondary Roads Through Forested Areas of the Post

This design criteria applies to primary and secondary roads which extend through the forested areas of the post. These routes are often valuable as running paths for both individual and group physical training/exercise. A running path is to be placed along one side of the roadway for this purpose. Apply this design criteria to the following locations:

- Mulberry Island Road
- Wilson Koad



Mulberry Island Road links the main cantonement with the range areas and Felker Airfield. Forest Edge See D.C.3.5.4 Preserve Exist. Trees Exist. Utility Lines Exist. R.R. Tracks Roadway Shallow Swale Mowed Strip Shallow Swale Running Path Exist. Exist. (Approx)

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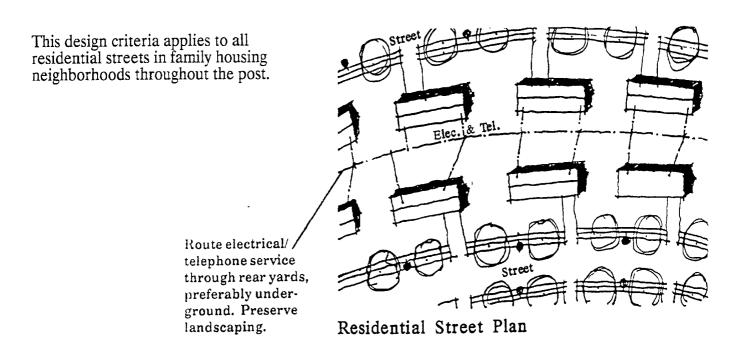
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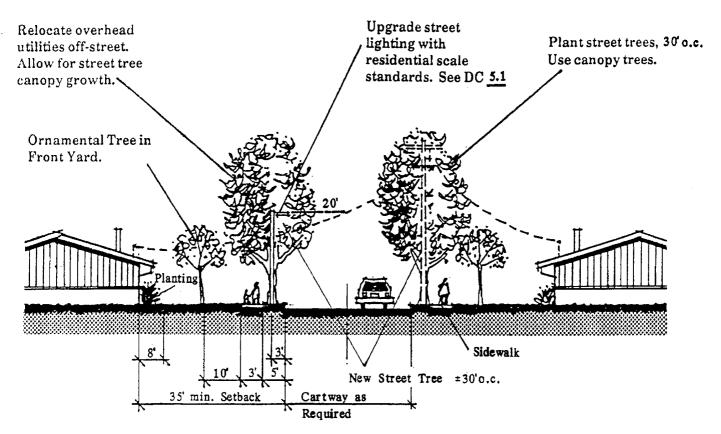
1.Site Planning

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Residential Streets

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Residential Street Crossection

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Roadway Sections Harrison Road (Riverfront)

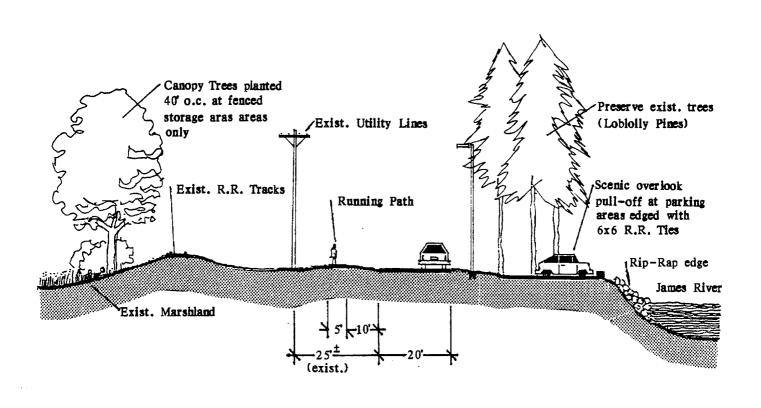
SS OS

This design criteria applies to Harrison Road, which extends along the length of the James River front. This road is valuable as a public overlook with a view of the "Mothball Fleet", as well as an active route for physical training. A running path is placed alongside the roadway for this purpose. Trees should be added along the edge of the existing storage yards (the 2000 area) to screen the view.

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Harrison Road offers a scenic drive (or run) along the James Riverfront.



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1. Site Planning

Troop Movement & Bikeway Systems

General Notes

An opportunity exists at Fort Eustis to create a dedicated pedestrian movement system. At present massed groups of soldiers (platoons) are marched about the post between living quarters and training facilities. They presently utilize the street system and this creates conflicts with vehicular traffic. Critical points of pedestrian crossing of Washington Boulevard (i.e. at Seay Plaza, Post Exchange and Marshall Street) should be clearly identified and treated. Two alternate movement systems are recommended:

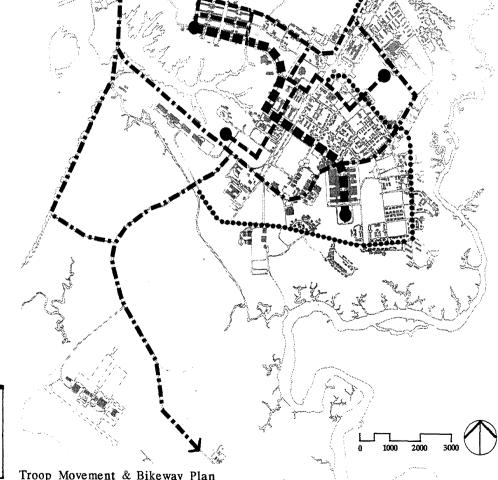
Troop Movement Pathway - A troop movement pathway should be developed connecting Sheppard Place along Marshall Street to the Technical Training Center (Bunker Training Area) at McMahon Street. See DC 1.5.1 through 1.5.5.

Bikeway - A bikeway system loop should be developed to connect family housing neighborhoods to training and administrative areas. See DC 1.5.6 and 1.5.7.

Physical training has always been important and long distance running has become increasingly popular in recent years. Certain roadways at Fort Eustis are routinely used by companies of troops running in formation. Smaller groups and individuals also run along established routes of 3, 5 and 10 miles. These routes should be more clearly identified, properly marked and appropriately paved. They should be separated from the road where possible to take advantage of the lush natural woodland setting of Fort Eustis. Where the roadway must be used for running, the shoulder area of the road should be

appropriately graded and paved to Avenue, Monroe Avenue, Harrison among the routes important for

allow for separation of vehicular and foot traffic. Taylor Avenue, Wilson Road and Mulberry Island Road are running.



Legend Primary Troop Pathway Secondary Troop Pathway Bikeway / Running Trail Bicycle Lane

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Troop Movement Pathway (Primary) Marshall Road

Portions of Marshall Road are to be converted to a major troop movement pathway. This entails removing vehicular traffic from that street and rebuilding it for the exclusive pedestrian use of troops.

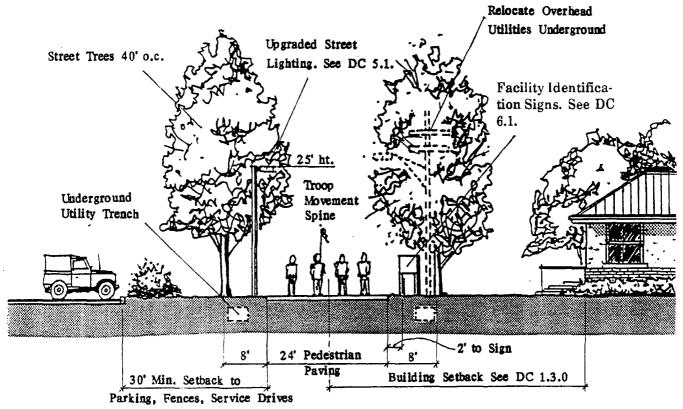
Cross streets are to be minimized. Where they occur, special crossing treatment is to be used.

The street is to be regraded (sloped 1% to drain to sides) and paving is to be bituminous material with concrete banding (see DC 3.7). Lighting is to be upgraded (see DC 5.1). Overhead utility wires are to be placed under ground.

Deep drainage ditches are to be replaced with underground piped stormwater system.



Marshall Road should be converted into a troop movement spine.



Froop Movement Spine Section

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1.Site Planning

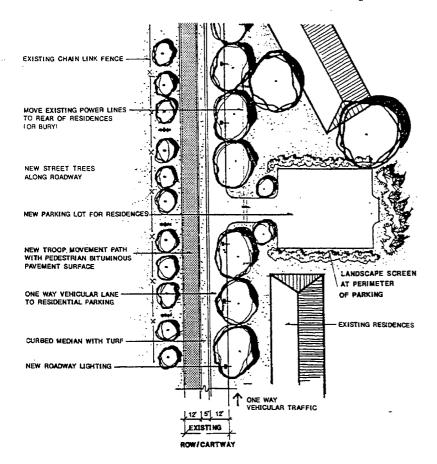
Froop Movement Pathway (Primary) Marshall Road

General Notes

The Troop Movement Pathway along Marshall Road will represent a major link between the Technical Training Center (Bunker Training Area) and the students barracks at Sheppard Place. Special paving materials and street furnishings are noted in their specific Design Criteria later in this document.



Troop Movement is of Vital Importance



Troop Movement Pathway Plan

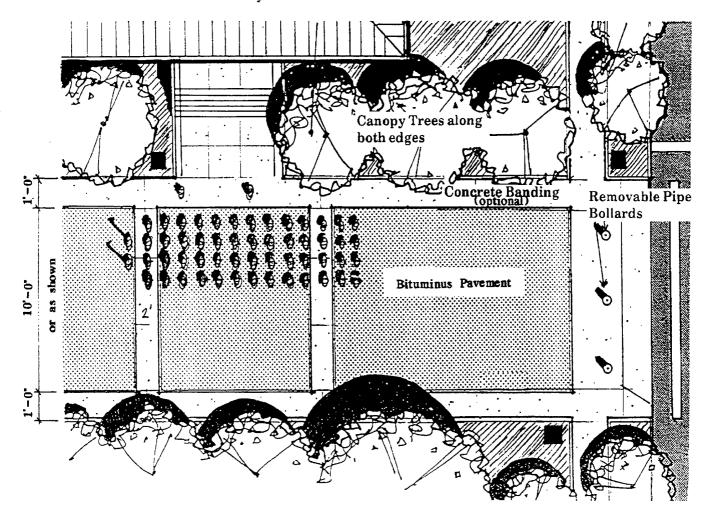
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Froop Movement Pathway (Primary)

The treatment of the Pathway is to create a pedestrian environment that adequately and appropriately supports troop movements between major activity points such as Marshall Road. The space should be large enough to permit platoons to pass in two directions, but not too wide to create a lifeless space. Large canopy trees and landscaping at the Spine edge and against buildings should frame the pedestrian space.

Bollards at intersections restrict vehicular access to emergency and occasional maintenance vehicles only.





Detailed Plan of Troop Movement Spine

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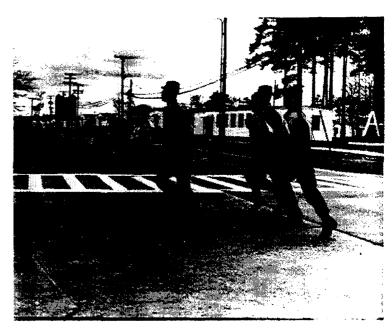
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Froop Movement Pathway (Secondary) For Developed Areas

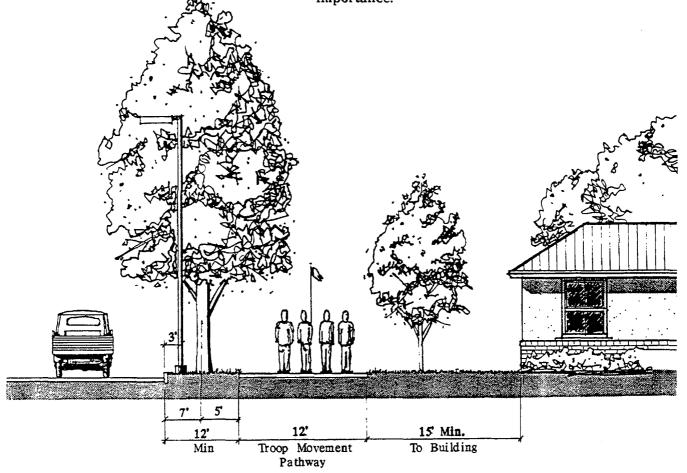
A Troop Movement Pathway system should be established to link troop housing, training facilities and other major activity areas. A 12' wide bituminous pathway with special treatment at intersections should be developed. A removable steel pipe bollard should be located at the intersections, centered in the pathway, to obstruct vehicles using the pathway.

The secondary Troop Movement Pathway represents a less intensively developed pedestrian system than the Primary Troop Movement Pathway. It may therefore be used more extensively.

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Accommodations for troop movement is of vital importance.



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For Forested Areas

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General Notes

A Troop Movement Pathway System should be established to link troop housing, activity and training areas. A 12' wide bituminous pathway should be developed adjacent to roadway (min. 18' from edge of road) and at edge of forested area. Special treatment should be utilized where pathway intersects roadways (see appropriate Design Criteria).

The Troop Movement Pathway represents a less intensively developed pedestrian system than the Troop Movement Spine. Small Ornamental Trees 40' ht. or Existing Trees In Forested Areas Curb May Not Be Present and Drainage will Utilize an Open Swale.-L Transitional Growth Cartway 10' Mowed Strip 12' Troop Path Mowed Forest 8' Gravel Strip Shoulder

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Troop Movement Pathway Section

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1.Site Planning

Bike Path

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Bikeway paving materials are to be bituminous with a brown/red colored aggregate to differentiate it from troop movement and roadway bituminous pavements.

Possible locations would include:

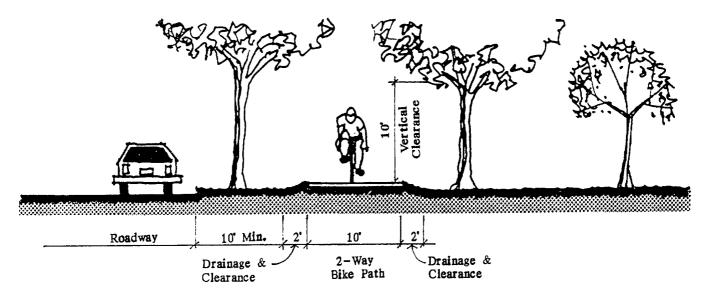
- Right of Ways
- Abandoned RR R.O.W.
- Fire Lanes
- Recreational Areas
- Along roadways and highways

Bike Rack Locations

- Adjacent to rear entrances of destinations
- Out of pedestrian pathways
- In areas of constant visual supervision

Bike path gradients:

- Maximum gradient 5% up to 1000 ft.
- Up to 10% may be used for 60 ft. maximum
- Bike path curve radii are to correspond to design speed and gradient



Bike Path Section at Roadway Edge

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1.Site Planning

Bikeway System - Details

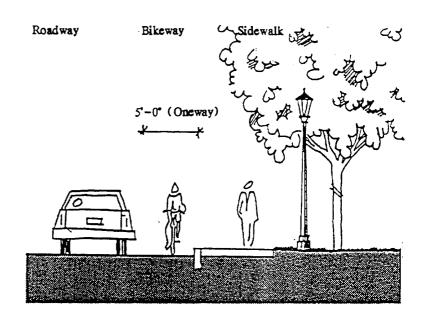
One-Way System - One Side Only

- Provide a 5'-0" wide bicycle lane within the street cartway on one side of street.
- Maintain bicycle lane consistently on same side of street avoiding crossovers.
- Use diagonally painted striping to demarcate the extent of bikeway lane.

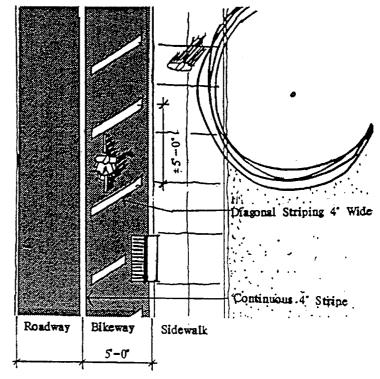
Two-Way System - Both Sides of Street

- Same as above, except use 5' wide bikeway lane on both sides of street.
- Utilize bike-proof storm water inlet grates.

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Bikeway Street Cross Section



Bikeway Plan View

Access to Buildings

GW TH TT TP SS OS FA FH CS

Page 1 of 2

The parking lot is often the arrival point for the visitor. Although a major building front entry may be oriented to the roadway, frequently it is the rear or side entrance that is used because it may be more convenient to the parking.

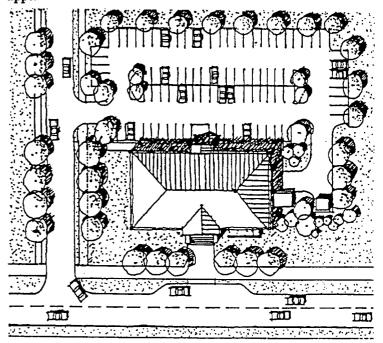
The proper siting and design of parking lots and the design of pedestrian spaces that lead from parking to the destination building are important to the overall impression of the installation, the following recommendations provide guidance for the siting and design of parking lots and related pedestrian amenities.

Parking in Rear

Parking is best located at the rear of buildings and facilities for effective screening of parking areas. Allow a 10-15 foot minimum setback for a planting strip for trees and shrubs and pedestrian walkway between the parking area and back of the building.



Note the curbed islands; new plantings would improve their appearance.



Parking in Rear

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Access to Buildings

Parking in Front

This occurs at existing buildings requiring a high level of access and visibility with a high turnover in parking, such as at community support facilities.

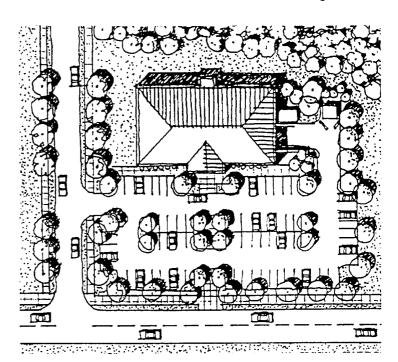
Existing parking in front of buildings should be maintained and improved; however, future parking in front of buildings should be discouraged in general. Locate new parking to the sides and rear of buildings instead.

Parking to Side

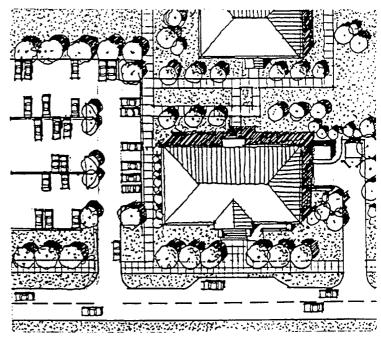
Recommended where several buildings share common parking field. Special consideration must be made for pedestrian pathways which direct visitors to the front entrance of the destination buildings.

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Page 2 of 2



Parking in Front



Parking to Side

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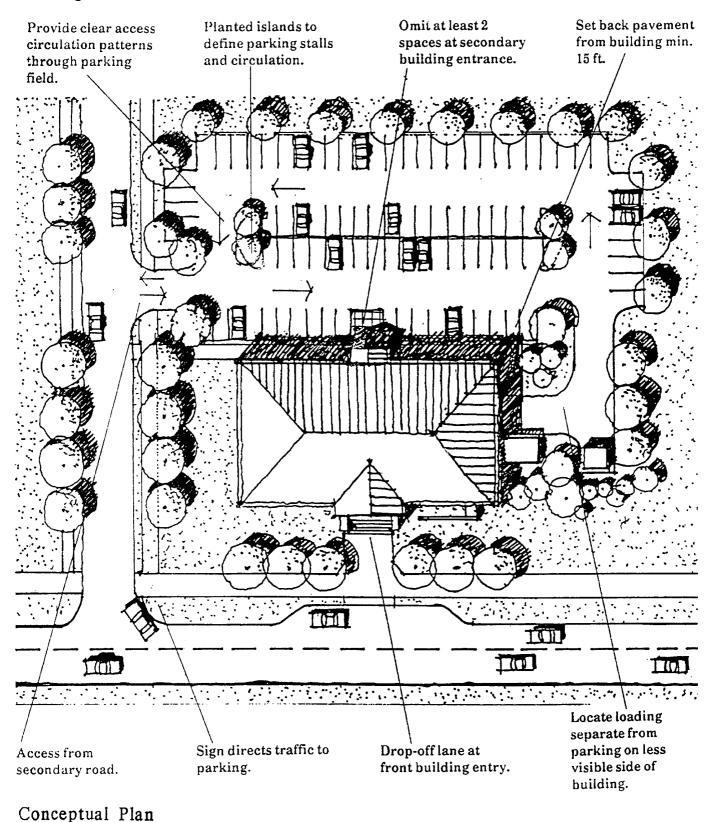
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Access to Buildings-Parking in Rear

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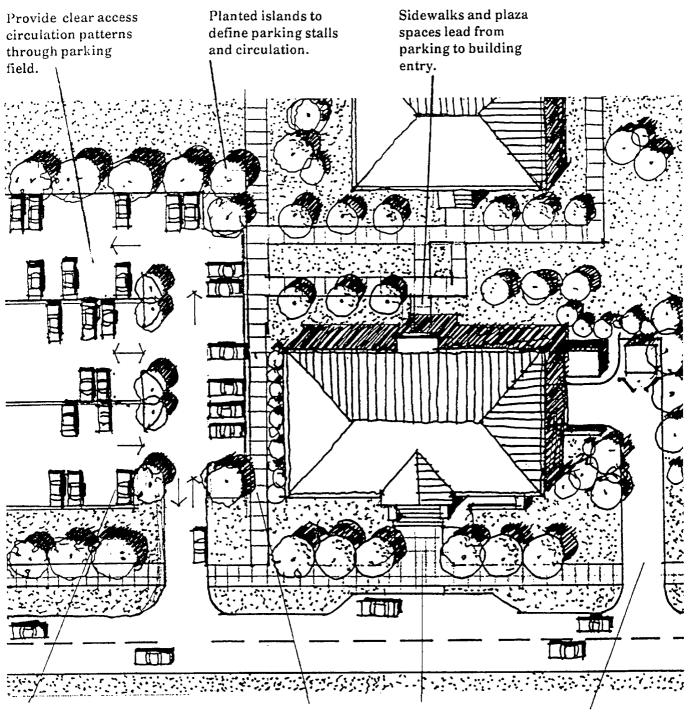
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1. Site Planning

Access to Buildings-Parking to Side

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Set back parking from street; equal building setback where possible. Sidewalks lead from parking to main building entrance.

Drop-off lane at main building entry.

Access to loading separate on less visible side/rear of building.

Conceptual Plan

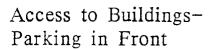
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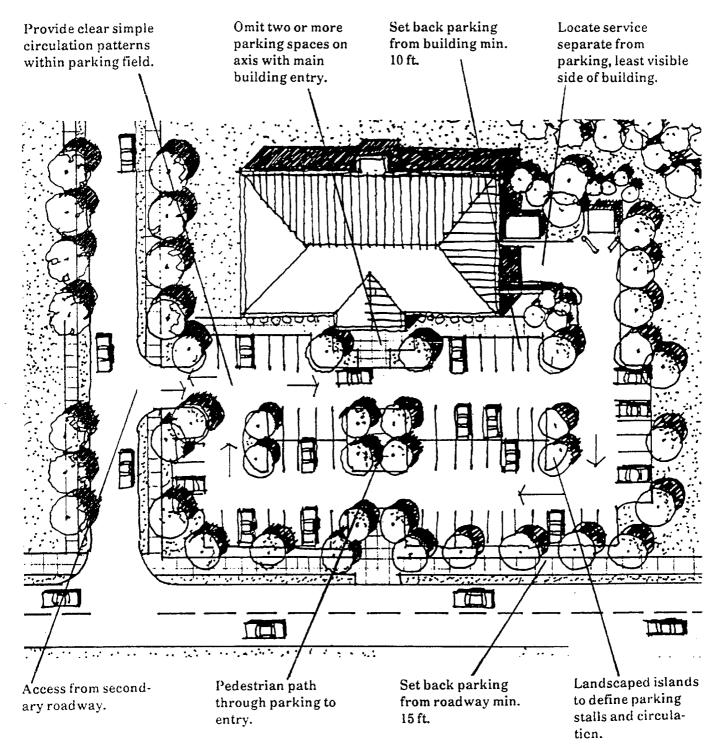
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1. Site Planning



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Conceptual Plan

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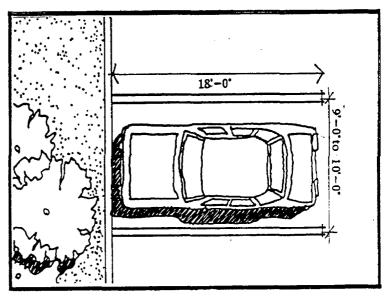
Off-Street Parking - Standard Dimensions

Individual stall size is to be 9'0" x 18'0". Parking lots with larger stall sizes should be restriped where their efficiency can be increased by doing so. The total width of each parking bay is to be 60 feet.

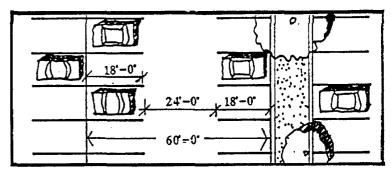
Larger dimensions are permitted in less densely developed areas of the post, or in motor pool areas where trucks and service vehicles must be stored. However, the space efficiency of these too must be minimized insofar as possible.

Parking lots must be held a minimum of 15 feet away from buildings and roadways wherever feasible.

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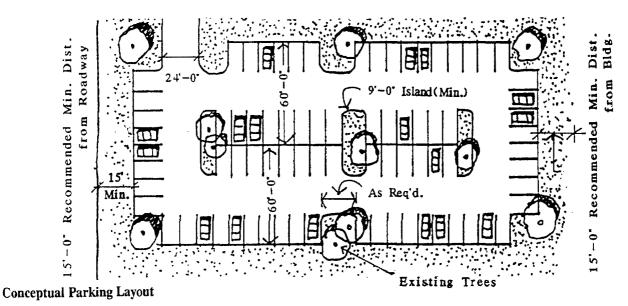


Individual Parking Stall



Width of Parking Bay

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Off-Street Parking Small Lots

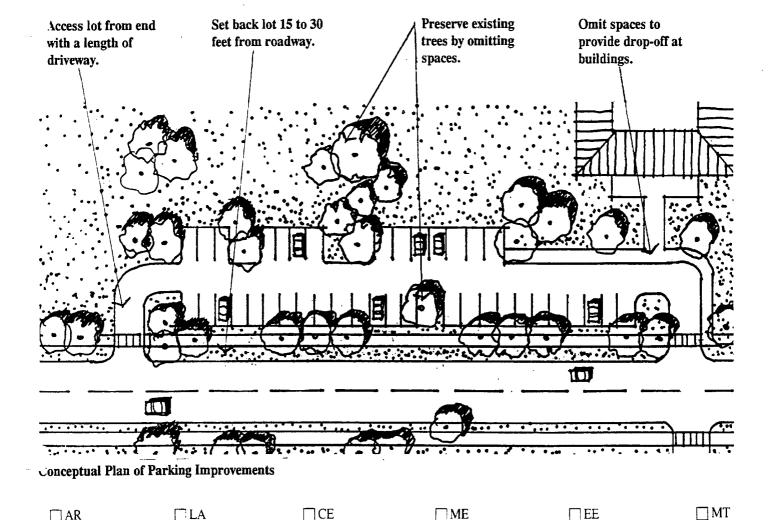
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General Notes

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Often public perpendicular parking is located directly on streets. This is a dangerous and less than desirable condition. Wherever possible, parking should be separated from the street by a planting strip. Access points (curb cuts) should be kept to a minimum to facilitate through traffic movement.



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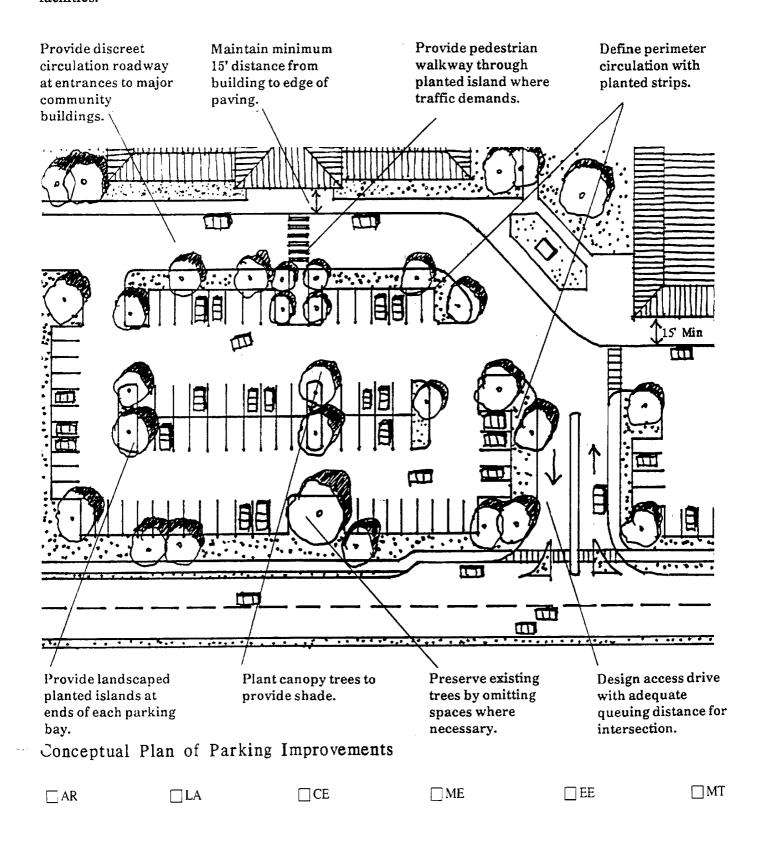
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Off Street Parking Large Shared Parking Fields

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This is particularly suitable for the Post Exchange vicinity, where a central large lot is shared by the surrounding facilities.



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1.Site Planning

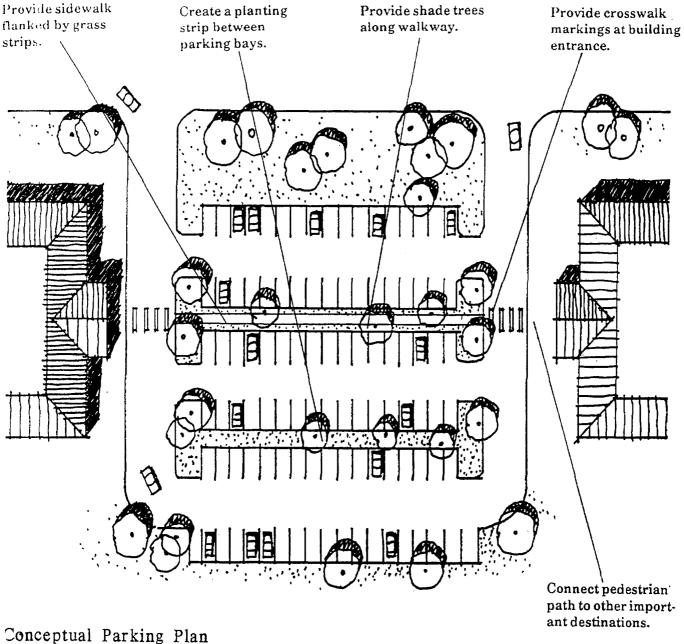
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Off Street Parking Integrating Pedestrian Pathway

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Frequently important destinations must be accessed by pedestrians through large parking fields. In these cases, a special pedestrian pathway is to be provided through the parking to the building entrance.





1. Site Planning

1.7.5

Off Street Parking Planted Islands

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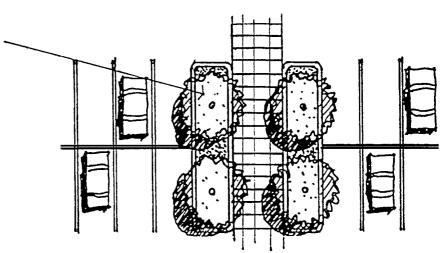
Provisions for landscaping must be made within larger parking lots. Planted islands are to be provided by omitting two parking stalls in adjacent bays.

Canopy trees are recommended for planting to provide shade.

Recommend no more than 15 to 20 spaces between plant islands.

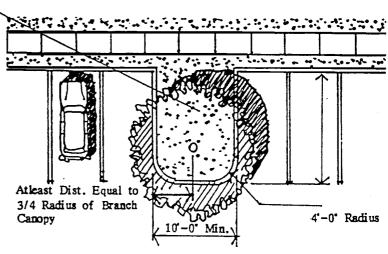
Radius Curb Planted Island

Use planted islands to define a pedestrian path leading to major buildings entries.



At edges of parking lots, omit single spaces to provide planting or to preserve existing trees.

Planted Island with Pedestrian Pathway



Perimeter Planting Bay

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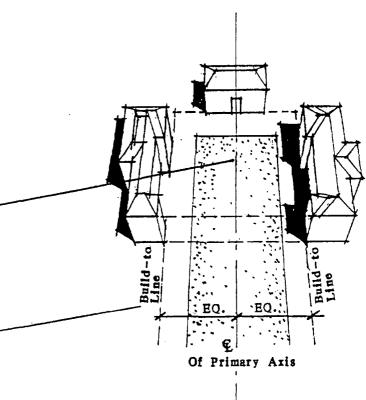
1.Site Planning

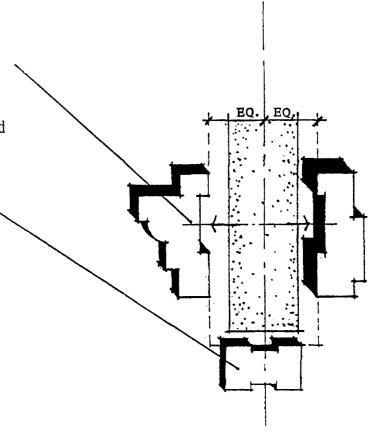
Buildings Flanking Formal Open Space

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Formal open spaces are desirable and should be defined by the location, placement, and scale of surrounding buildings. In some locations, the elements of this type of space already exist and need only be completed by the careful planning of building locations and landscaping. In other areas a totally new configuration of building groups needs to be created.

- Center axis of open space establishes reference line for symmetric placement of buildings on both sides.
- Buildings to be setback equally on both sides of centerline.
- Building fronts facing each other on opposite sides of the space to be designed with similar massing and proportions where possible.
- Building located at end of axis should be designed with symmetric facade with entrance or feature opening at center. Function of building should be of some importance.





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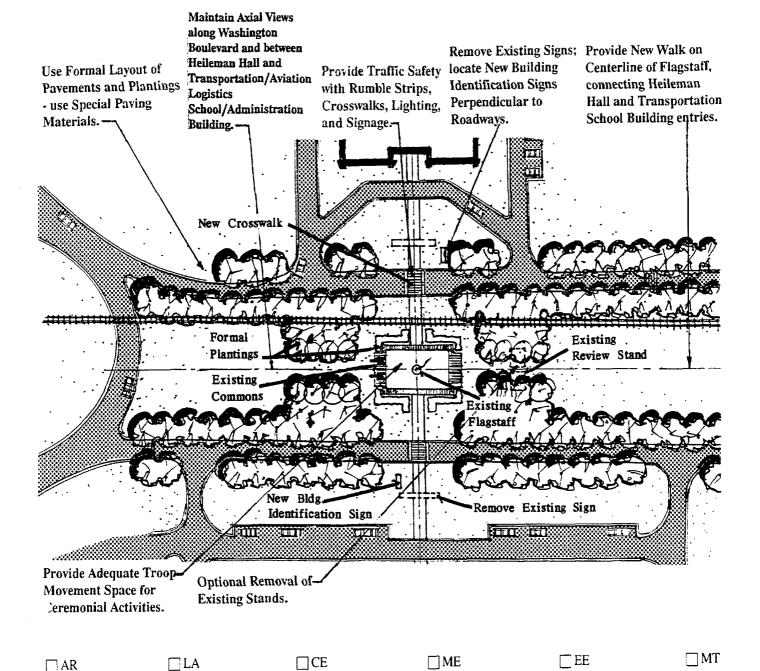
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Key Ceremonial Areas--Main Flagstaff

Because the main flagstaff is located between the major administrative buildings near the gateway and Hines Traffic Circle on the busiest road on post, the layout and circulation design of this road is very important. Major ceremonial needs will require adequate paved area for small troop ceremonies, and the high visibility of the flagstaff will create a need for special paving and formal planting materials.

Pedestrian safety is a prime consideration for troops and spectators; crosswalks, warning rumble strips, signage and lighting are recommended measures. Traffic rerouting should be considered for major events.



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Washington Boulevard Terminus

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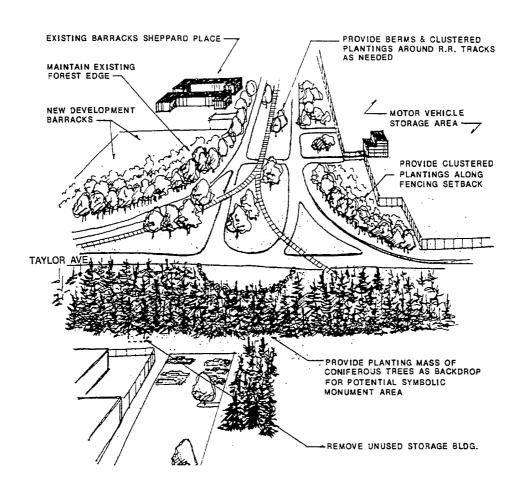
The long axial alignment of Washington Blvd. ends at Taylor Ave. with a view of chain link fencing, miscellaneous storage and maintenance buildings of odd sizes, and railroad tracks at odd angles. To provide a strong ending to Washington Blvd., the following measures should be taken:

 Maintain existing forest edge and minimum width existing tree buffer in area of new barracks installation.

□LA

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- Strong groups of plantings on both sides of Washington Blvd.
- Increase setbacks on Taylor Ave. at terminus and along Washington Blvd. (storage) by demolishing miscellaneous obsolete buildings and by fencing setbacks.
- Remove unused railroad tracks where possible.
- Provide a strong entry condition to the Joint Strategic Deployment Center (Goodman road).



☐ ME

☐ CE

Warehouse & Storage Yards

SS

Careful siting of warehouses and planning of fenced storage yards is essential to insure that these industrial functions are properly screened from more public areas. When locating storage facilities, the following guidelines should be considered.



View of warehouses from Taylor Avenue. Locate warehouse to Orient access doors Provide access from Use landscaping to screen view from in-ward, out of view secondary road. form part of the security parameter. from roadway. main road. Secondary Roadway Align Buildings Set back security Organize outdoor Along Consistent fence 15' (min.) from storage in ortho-Setback Line face of building. gonal patterns. Conceptual Plan of Service Yard \square MT ☐ EE

 \Box CE

LA

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Loading Dock Orientation

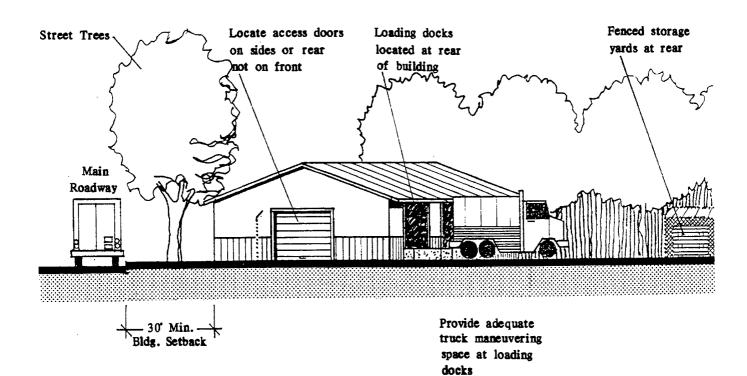
TT SS

Smaller Utilitarian buildings must be oriented so that loading bays occur at the less visible side of the building. This is especially important where the building is located close to a major road.

Use this criteria at the existing storage buildings along Taylor Avenue and Lee Boulevard.



Loading docks located on the front side facing a major roadway are unsightly and should be removed.



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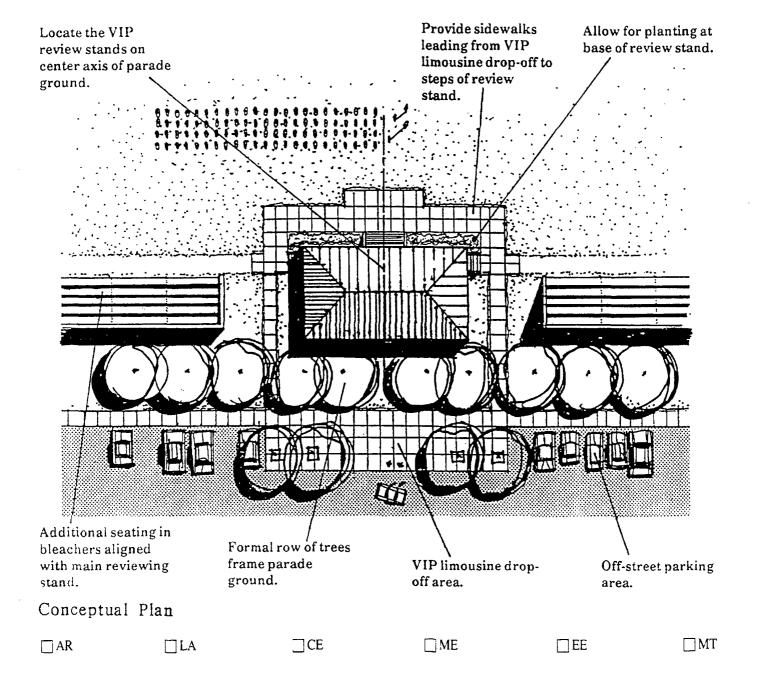
□ EE

Review Stands at Parade Grounds

GW CS

General Notes

The location and design of Reviewing Stands should respect the fact that these facilities will generate a great deal of public exposure. Siting should not block existing views toward or from buildings formal open spaces.



New Family Housing Development

FH

Cluster attached units around common parking courtyards.

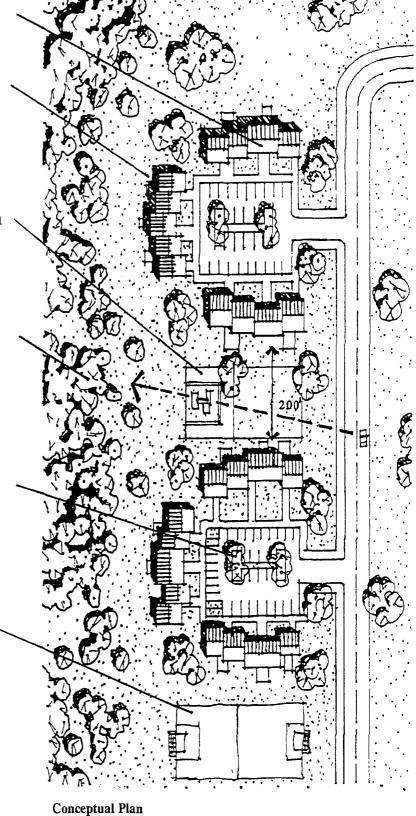
Modulate row to create residential scale and allow for individual identity for each unit. Step back forward each pair of units 4 to 8 feet at each step.

Provide open recreation space between housing clusters allowing view to forested areas and breaking up density of development.

New housing development should take full advantage of mature forested areas. Siting should maximize this natural amenity.

Parking court should be planned with trees and planting island to break up excessive paving in center.

Recreational facilities should be developed close to housing and be utilized by several age groups.



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EE

Drainage in Lawn Areas

GW TH TT TP SS OS FA FH CS (1 of 2)

Existing Ditches

Ditches should be eliminated wherever possible by the use of culverts and underground piping. An overall drainage plan as an engineering study should be conducted by the DEH for underground piping.

Swales

 \square AR

Where drainage is minimal and water flow does not require underground piping, grass-covered swales are an appropriate solution. Wide shallow ditches transferring water to a catch basin or lawn inlet should create as little interruption in lawn areas as possible.

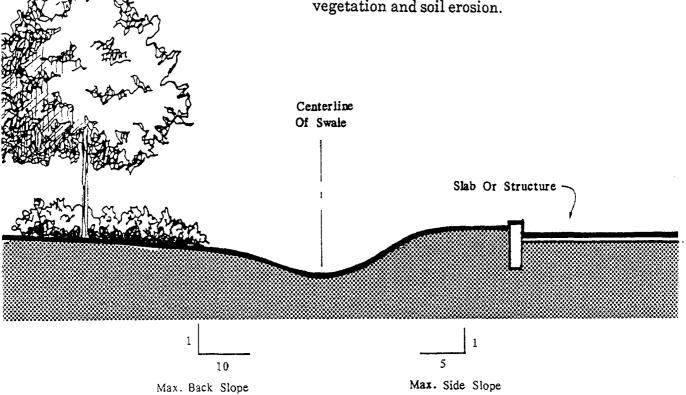
Swale location and design will be determined by drainage requirements and surrounding site layout. Round off grade transitions to prevent vegetation and soil erosion

LA



Drainage Ditches often impede troop circulation on post.

Swale location and design will be determined by drainage requirements and surrounding site layout. Round off grade transitions to prevent



 \square ME

CE

Drainage in Lawn Areas

GW TH TT TP SS OS FA FH CS (2 of 2)

Swales (cont'd.)

Field Stone may be required in areas adjacent to drainage structures, such as lawn inlets, to further prevent soil erosion. If excessive riprap is required and the depth of the swale creates a drainage ditch, underground piping and drainage should then be considered by an engineering study.

The following criteria apply to swale design:

Longitudinal Slope - 2% min.
Grass - 8% max.
Riprap - 10% max.

Cross Slope - 2% min.
Side - 1.5 max.
Back 10% max.

Swales should be wide and shallow at the top and should increase in depth at the end.

Tree and shrub vegetation should be kept out of grass swales.



Where feasible, drainage ditches should be piped under ground.

General Notes

GW TH TT TP SS OS FA FH CS

(Page 1 of 3)

Historical Context:

The pattern of development of Fort Eustis is a result of a series of building campaigns beginning in 1917. The national emergencies of World War I and World War II each required massive buildups, which took the form of extensive grids of one- and two-story wooden structures.

Nearly all of these structures are now demolished as areas have been developed with more permanent larger structures. However, the basic infrastructure, the pattern of roads, the network of railroad tracks, and general layout of the post remain somewhat a permanent legacy of the first building campaign. The extensive system of railroad tracks throughout the post is, in fact, a remnant of the post's original mission as a Coastal Artillery School facility, and are presently being utilized.

Current Trends in Installation Development

Fort Eustis is representative of the overall trend in redevelopment for military installations, which has been towards larger more permanent buildings, and away from repetitious grids of temporary structures. This is due, in part, to efficiencies required by the programmatic demands of the building functions, as well as the economies of mechanical building systems and energy conservation.

As the older structures have been removed, larger development sites have been created. Fewer streets are required to service these larger "blocks." Redundant streets which remain from the previous pattern of development must be removed so that they do not interfere with efficient site layout.



Existing buildings flanking Washington Boulevard have established the all-brick theme for those areas.

Architectural Theme

At Fort Eustis the result of this redevelopment will be cohesive areas of clearly organized complexes of buildings with well-defined spaces between. This allows for a strong architectural theme to be recognized and enforced for these new buildings.

The theme is to be adopted to each visual zone of the post, taking into consideration the existing development. Where brick is the predominant material, it shall continue to be used. Where the buildings have been faced with stucco (or exterior insulation material), that will continue to be used in combination with brick to insure a unified image. And where buildings have been designed with a strong industrial or maritime character, such as the Applied Instruction Area, Third Port and Felker Army Airfield, future development must complement and reinforce this scale and character.

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GW TH TT TP SS OS OS FA FH CS

(Page 2 of 3)

Over the past two decades, the more permanent buildings developed at Fort Eustis have begun to establish these architectural themes. The use of red brick with limestone/cast stone trim for the Post Exchange building and several other structures nearby has set a strong precedent for future development in that area. The Anderson Fieldhouse, Welcome Center, NCO Club and Post Headquarters buildings establish the Washington Avenue corridor and Community Services Zone as a brick oriented area. This is appropriate for that high visibility area.

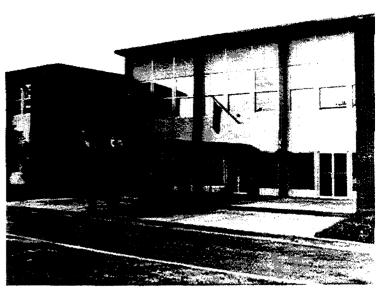
In certain barracks areas, such as the complexes flanking Sheppard Place (600/1000 block) and Cameron Place (800 block), an exterior stucco finish is the prevailing style. Renovations are to match or complement this finish, while new structures are to incorporate stucco as part of the exterior design.

Very large-scale stucco or painted masonry buildings may be articulated by a two-color scheme involving two shades of tan or brown. This approach may be applied at the Felker Army Airfield.

Development Plans

The Installation Master Plan indicates several areas within which a number of new buildings will be built sometime over the next five to ten year period. These areas of concentrated new development are ideal opportunities to establish a strong unified image for those areas through careful coordination of all phases of the work and application of the appropriate design criteria. These critical areas include the following:

- New enlisted barracks complex south of Schultz Place.
- Third Port development at Bailey Creek.



The Post Headquarters Building is to be used as a reference for matching brick in new buildings.

- Post Exchange area (includes new Commissary facilities).
- Community Service and recreation facilities east of Anderson Fieldhouse.
- Reserve Center facilities planned for the area along Shultz Place.

Each of these areas must be coordinated through the application of the design criteria to insure a strong, unified image.

Moreover, an overall site development plan should be prepared so that the specific building configuration, site design and circulation patterns are entirely designed. (See Site Planning design criteria.) This assures design coordination throughout multi-phased development.

□ AR □ LA □ CE □ ME □ EE □ MT

2. Architecture

(Page 3 of 3)

Scale and Massing

Where the scale of different buildings has been consistent in a single area, the effect has been a strong unified image. This consistent scale should be continued in new development. Although floor areas and overall bulk of buildings must vary to accommodate required functions, awkward differences in scale must be resolved by carefully shaping the building's mass and by articulating the facade design. DC 2.1 through DC 2.1.4 address these issues.

Design Character

In areas of existing development, the design guidelines for new buildings are based upon the prevailing architectural features common to most of the existing structures. The intended result is the continuation of a unified theme in building materials, detailing, fenestration, roof profiles and general character.

Much of the recent barracks renovation work has utilized an exterior insulation wall finish system which results in a stucco appearance (similar to Dryvit). This has been used on both renovation work as well as new construction. The design criteria allow for the use of this material in certain visual zones, although a more permanent material, such as brick masonry, is recommended.

Historic Buildings

Fort Eustis has very few historic structures. However, as repairs, renovations or alterations are required for these buildings, follow the recommendations of *The Secretary of the Interior's Standards for Rehabilitation of Historic Buildings*.

Materials and Colors

To maintain a coordinated "palate" of building materials and colors within a single area, refer to DC 2.6.0 through DC 2.6.4. Recommendations are outlined for all major building components.

The architectural themes developed for Fort Eustis involve a choice between two major building materials, brick or a combination of brick and stucco. A third choice of all stucco may be used in areas less visible by the public. The Architectural Design Character sketches reflect these material choices. Note that the use of all stucco is limited to the portions of the OS zone that already have stucco buildings.

Technical & Engineering Aspects

Consideration of performance aspects of these building components, such as life cycle costs and value engineering, may require refinements to these specific recommendations. In general, the goal is to match the material and color selections for major building components within a single visual zone. Where existing buildings exist, these serve as the basis for matching new buildings.

These Design Criteria are intended for control of the *appearance* of building materials. Responsibility for adequate and appropriate technical performance of building components lies with the project manager, DEH, architect, engineer, builder and/or construction manager.

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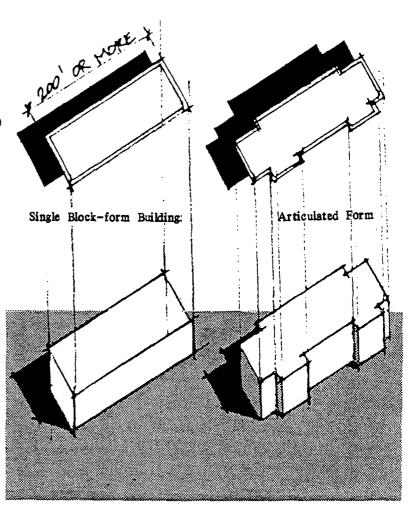
2. Architecture

Massing and Articulation of Large Buildings

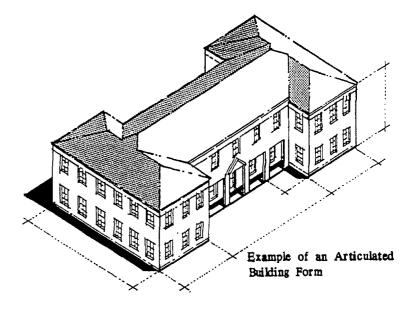
Simple block-forms for larger buildings appear awkward and out-of-scale when located among smaller-scaled structures.

When the program requires a large building mass, the form must be "articulated" by modulating the facade plane. This breaks up the otherwise massive form and reduces the apparent scale to better fit with the surrounding buildings.

GW TH TT TP SS OS FA FH CS



This example shows a large building which has been "articulated" to appear as three smaller rectangular forms. A central gallery flanked by two pavillions.



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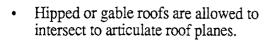
2. Architecture

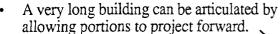
Massing & Articulation Single Story Buildings

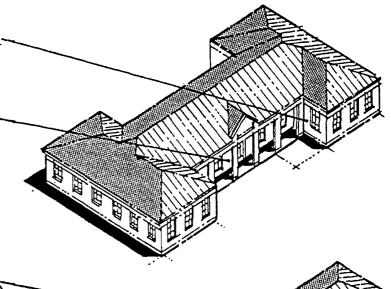
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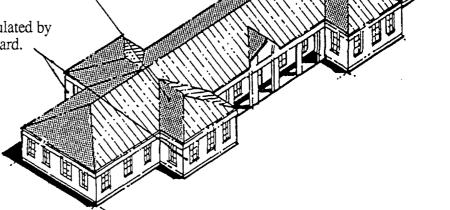
When program requires a large building mass, the form should be "articulated" by modulating the facade plane.

- Simple rectangular plans are fine for smaller buildings.
- Larger plans can be articulated by recessing the center portion, creating reentry corners.
- Arcades may be used to reinforce the importance of the entrance.









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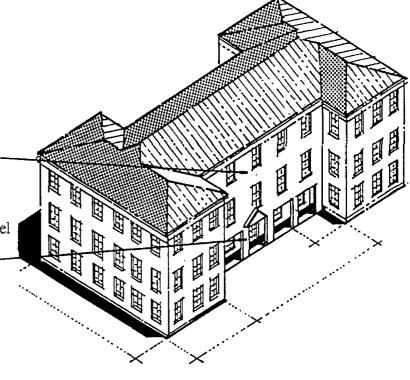
2. Architecture

Massing & Articulation 2 & 3 Story Buildings

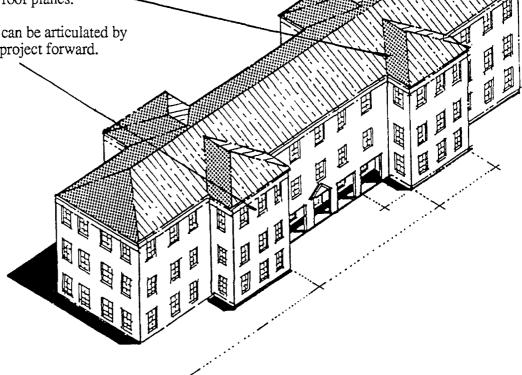
GW TH TT TP SS OS FA FH CS

When the program requires a large building mass, the form should be "articulated" by modualting the facade plane.

- The overall mass in this example is articulated by creating re-entry corners and recessing the center portion of the facade.
- Arcades may also be used at ground level to reinforce the importance of the entrance.



- Hipped or gable roofs are allowed to intersect to articulate roof planes.
- A very long building can be articulated by allowing portions to project forward.



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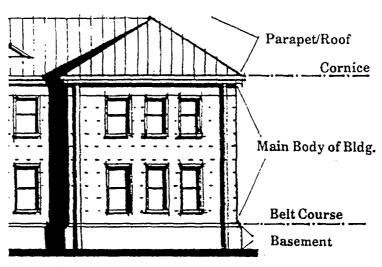
2. Architecture

Building Height

GW TH TT TP SS OS FA FH CS

Overall scale and massing of buildings must be coordinated to insure a unified image for the installation. In any single area, the heights of buildings should be matched, so that a consistent scale is maintained. Differences in floor-to-floor heights and sloping sites may require some variation. However, in general, alignment of all major building features is preferred. These include general fenestration, cornice lines, belt courses and roof lines, all of which should be aligned with adjacent buildings whenever possible.

Although specific program requirements may require higher or lower structures, where feasible, the following Recommended Maximum Building Heights are to be applied. Where indicated, the Preferred Building Height represents an ideal height for all buildings in the visual zone.



Elevation Elements

Recommended Maximum Building Heights									
	GW	тн	TT	TP	SS	os	FA	FH	CS
1 Story					0	0			0
2 Stories	0	0	•	•	•		0		
3 Stories	•								
More than 3 Stories									
= Maximum Allowed = Preferred Bldg. Ht.									

EE

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2. Architecture

Massing and Articulation Taller Buildings

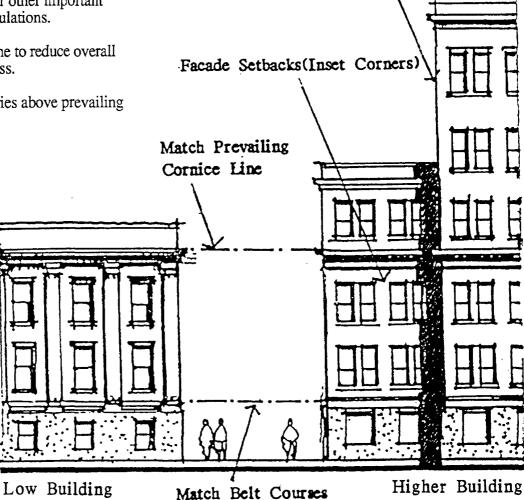
GW TH TT TP SS OS FA FH CS

Tall massive buildings, when placed among much smaller buildings, may appear awkward and out-of-place.

When the program requires a taller building in an area of smaller structures, the design of the taller building must be "articulated" to reflect the predominant scale of the surrounding area.

The following design techniques are to be used where appropriate:

- Match cornice line height where adjacent buildings have prominent cornice features.
- Match belt courses or other important lines of vertical articulations.
- Modulate facade plane to reduce overall scale of building mass.
- Step-back upper stories above prevailing cornice line.



Step-back Upper Stories

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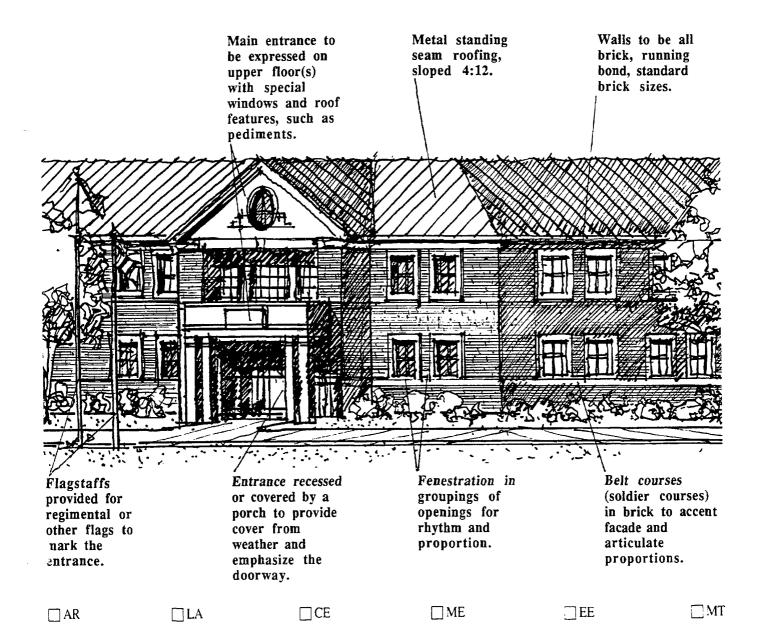
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2. Architecture

Design Character Contemporary Brick Theme

GW TH CS

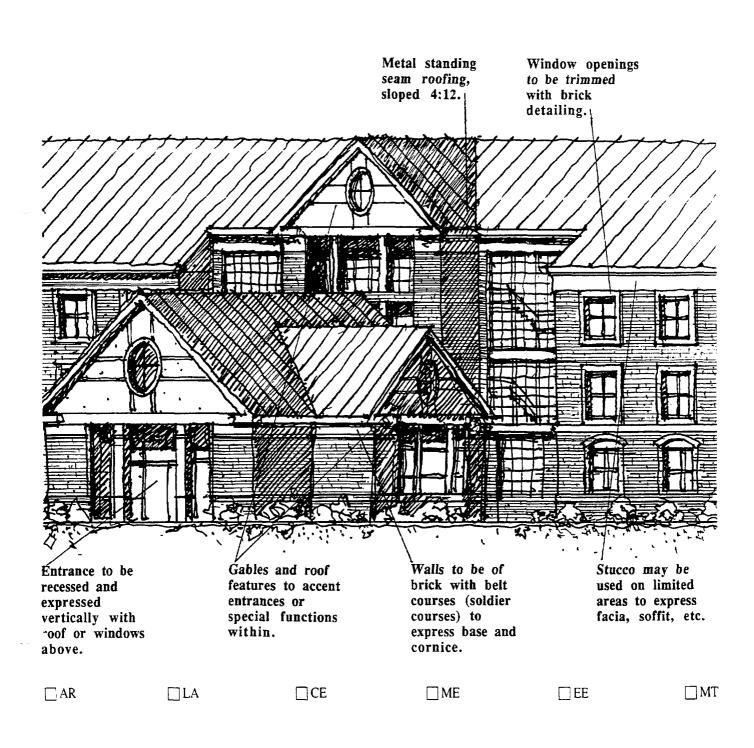
This design criteria is to apply to command, administration, research and major classroom buildings as well as other similar facilities. These are highly visible building types and demand an architectural treatment appropriate to their importance. Their design character must be of the highest quality to inspire pride, promote morale and increase productivity in the people who use them.



Design Character-Barracks Contemporary Brick Theme

TH

The essence of the army installation, and the setting for some of the most intensive training experiences for the soldier, is the barracks compound. These buildings have the great potential to inspire pride, promote morale and increase productivity because they are the place that the troops live, wake and sleep.



2.2.3

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2. Architecture

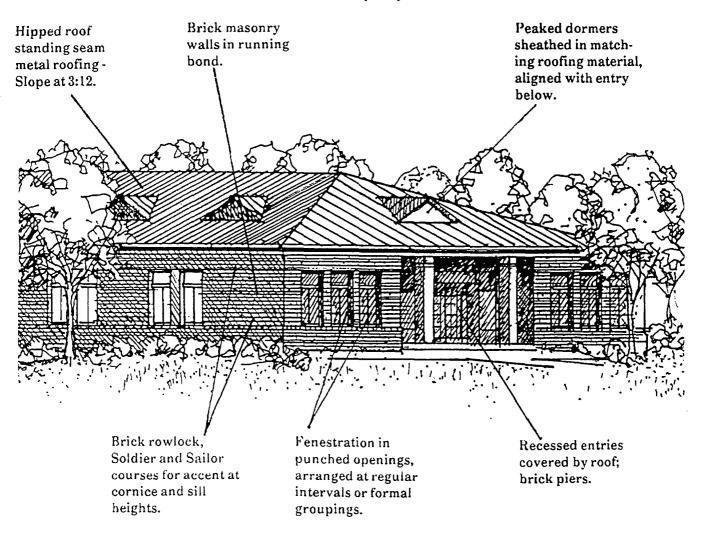
Design Character Contemporary Brick Theme

GW CS

To be used for all building function types except warehousing throughout the referenced visual zones. This criteria is especially appropriate for classroom, training, administration, and community service buildings.



NCO Club is a good example of recent architecture in Contemporary Brick Theme.



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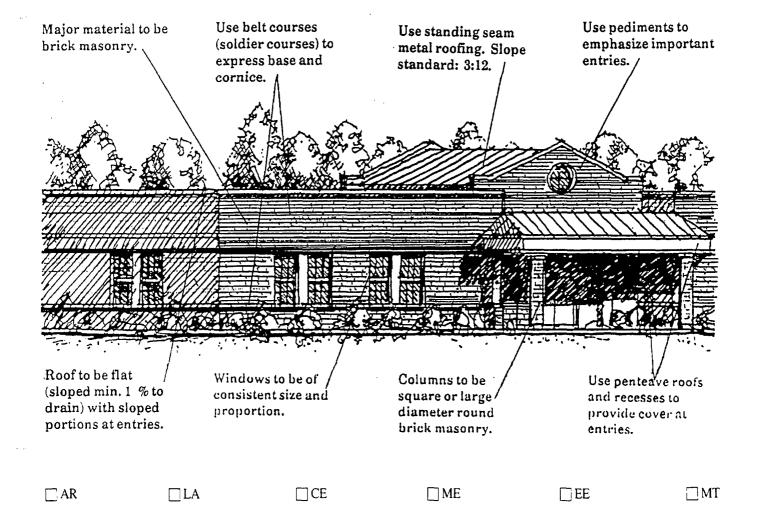
2.2.4

Design Character Contemporary Brick Theme

GW CS

In those areas of the post where brick has been the prevailing material in permanent buildings, new structures should be designed in brick with limestone/cast stone trim. These areas include:

- Headquarters Bldg. vicinity (Quartermaster School Bldg.)
- Hospital vicinity



2.2.5

2. Architecture

Design Character--Gatehouse/Sentry Station

GW

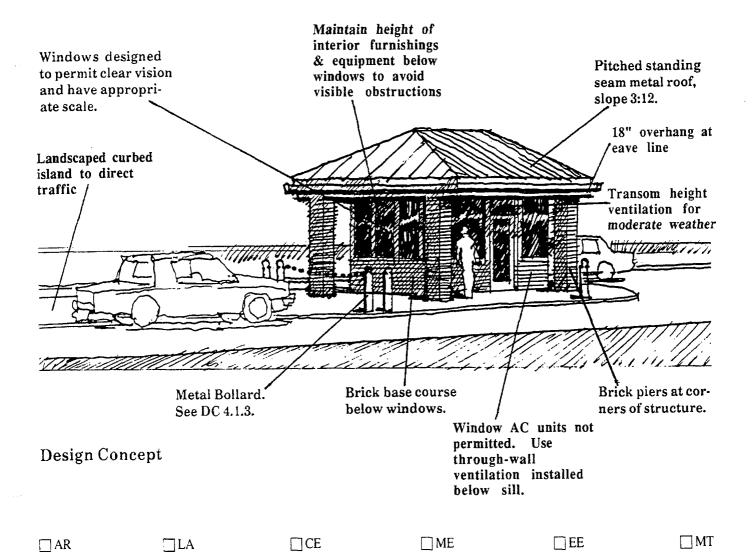
General Notes

The Gatehouse is the first structure one sees when approaching the Post. The structure should be simple but well designed. Brick and metal sloped roof should be used. Appropriate lighting and site furnishings should be incorporated to improve the visual image.

The existing gatehouse should be upgraded as funds become available. A new gatehouse planned for the new (second) entrance to the Post is to be designed to reflect this character.



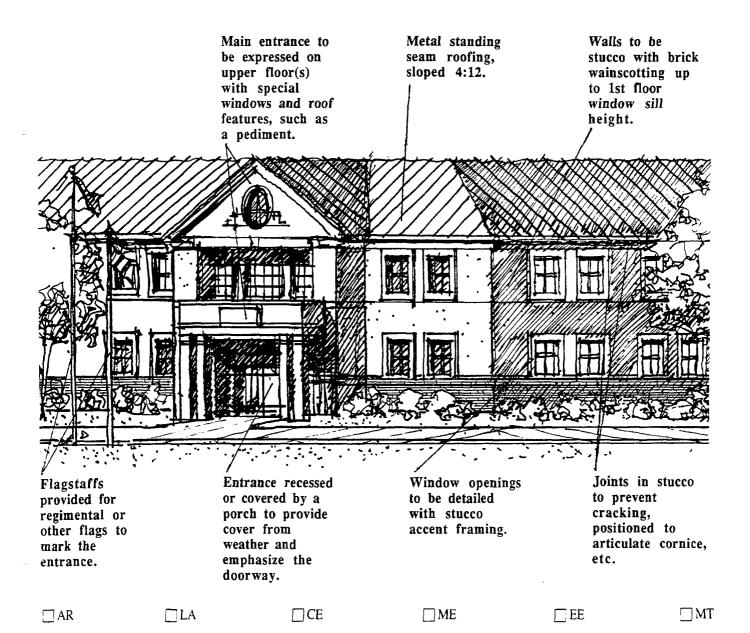
Existing Gatehouse at the Washington Boulevard entrance



Design Character Stucco & Brick Theme

TH TT TP FA CS

This design criteria is to apply to command, administration, research and major classroom training and similar facilities. The combination of stucco and brick, as illustrated here, is available as an option to the all-brick scheme for areas of lower visibility or where substantial development of stucco-type buildings presently exists.



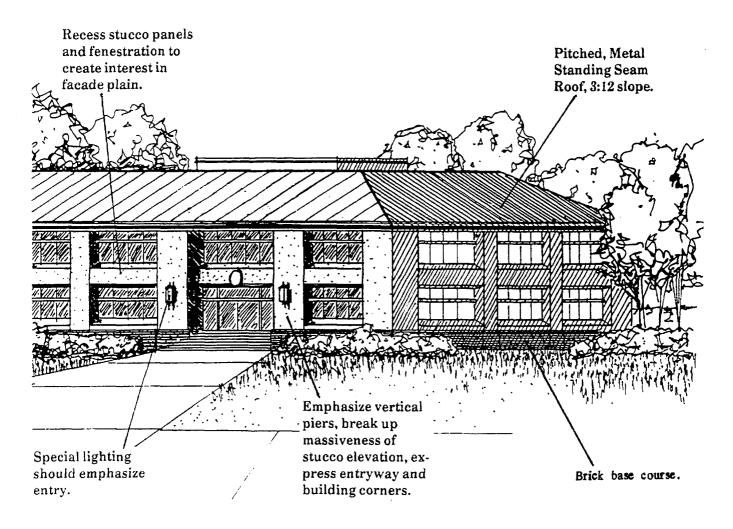
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2. Architecture

Design Character-Contemporary Stucco & Brick
Theme
General Notes

The design of new buildings should relate in scale and materials to existing significant buildings. While masonry is preferred, stucco may be introduced in this zone. Pitched roof forms and properly scaled windows will contribute to the positive design theme.

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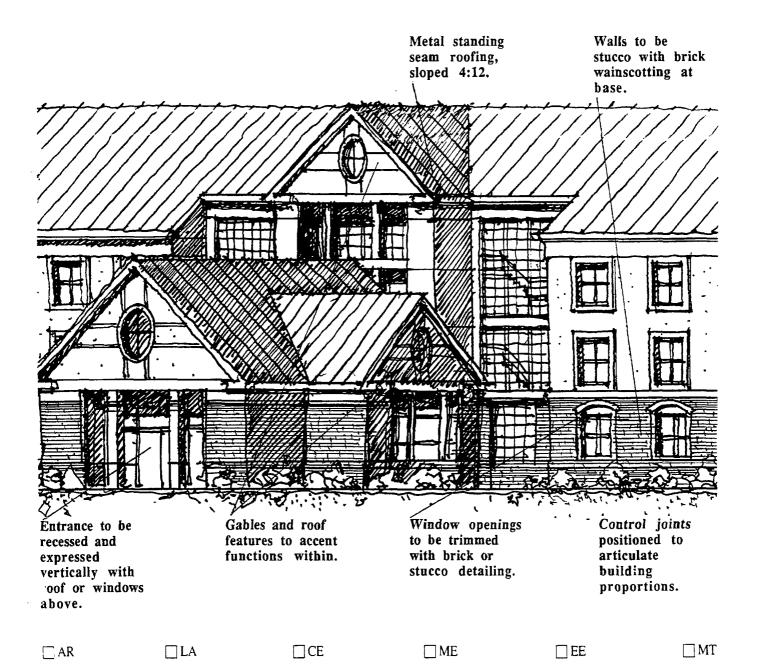
Design Concept for New Buildings

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Design Character--Barracks Contemporary Stucco & Brick Theme

This design criteria may be used for troop barracks as an option to an all-brick scheme in areas where substantial development of stucco buildings presently exists. The combination of brick and stucco is achieved by creating a brick base (wainscotting) finished at it's top course (at the 2nd floor sill height) with a belt course (soldier course). The stucco is to be designed with control joints positioned to establish cornice lines and belt coursing to articulate the building's proportions.

TH



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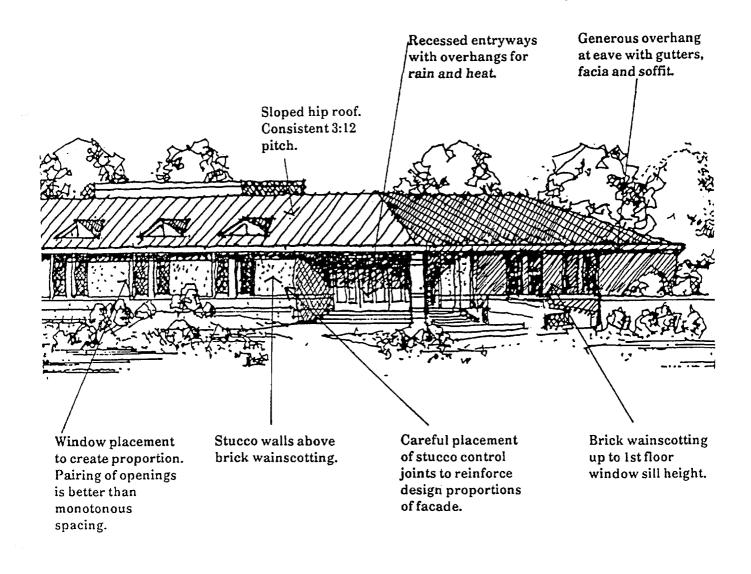
2. Architecture

Design Character Contemporary Stucco & Brick Theme

Several new buildings are proposed within the visual zones referenced above. In some cases, several new buildings will be developed in a cohesive cluster in an area where existing structures are to be demolished or no buildings currently exist.

These new projects must be designed according to a single architectural style with matching materials, so that they create a unified image for the area.

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2. Architecture 2.2.10

Design Character Contemporary Stucco & Brick Theme

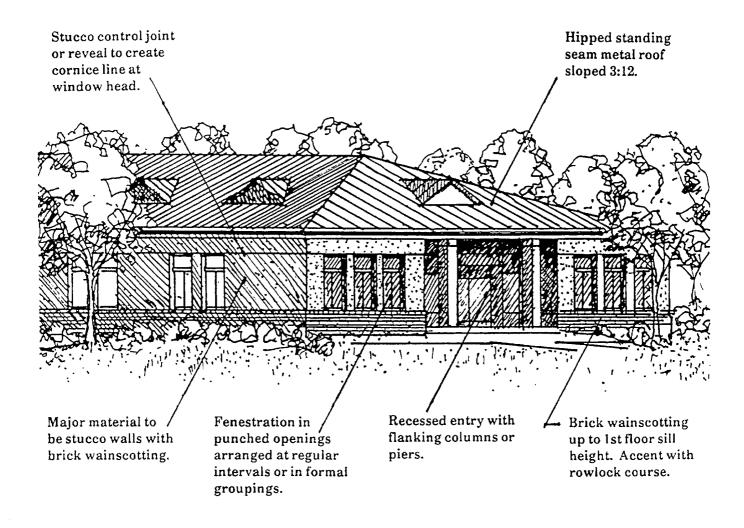
New buildings proposed for the abovereferenced visual zones are to be designed according to a single architectural style with matching materials, so that a unified image is created for those areas.

The example illustrated below is particularly appropriate for administrative, training, dining, and other community support functions.

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CE

2. Architecture

Reviewing Stands at Parade Grounds

GW TH CS

Parade Ground and VIP reviewing stands are Hipped standing seam metal roof among the most highly visible aspects of the post from the point of view of the important sloped 3:12. visitor and senior command. As such, the design of these facilities represents the quality of the installation as a whole, and, therefore, deserves careful attention. The review stand should not be seen as a temporary structure. It is an important permanent building marking the central axis of a formal ceremonial place. Traditional styled columns at corners.

Stairs on sides and at center.

Brick base to match adjacent buildings (DC 2.6).

Ornamental landscaping at base. Eave, soffit and facia details shaped to emulate traditional wood moulding profiles.

on each side, as required.

Conceptual Elevation

Additional seating

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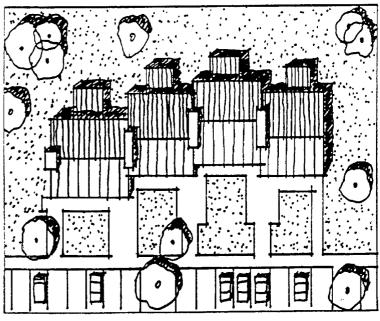
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Design Character--New Family Housing

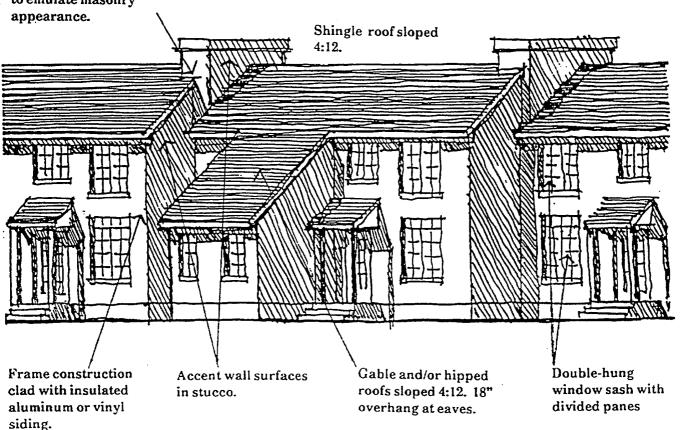
FH

Any new family housing which may be developed in the future is to follow these design guidelines. Emphasis is given to stepping the plan to give greater individual identity to each dwelling unit. Brick masonry is recommended, though vinyl siding or stucco surfaces may also be used in coordination with brick.



Conceptual plan of "stepped" family housing units (row of 8 units).

Brick chimneys or stucco on metal frame around metal flues. Stucco details to emulate masonry appearance.



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CE

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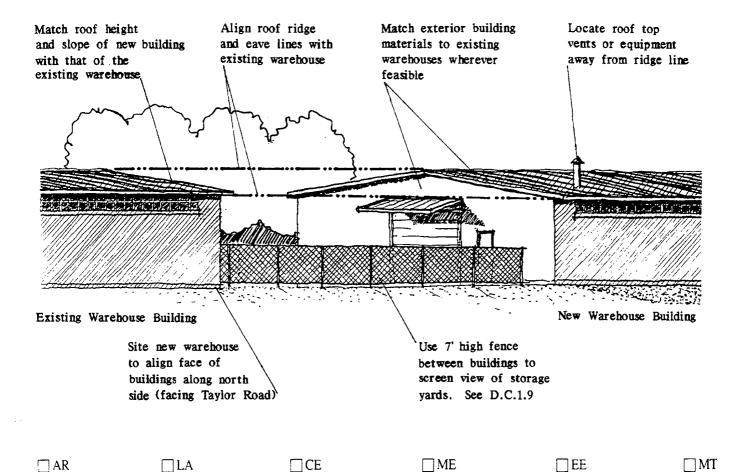
EE

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Design Character Warehouses

SS

The current master plan calls for several new warehouses to be developed in the existing warehouse area. These new buildings are to be sited and designed as a continuation of the existing warehouse development. The strong geometric arrangement and uniform design of the buildings give this area a neat and orderly appearance. The following criteria are intended to reinforce and enhance this image.



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2.3.1

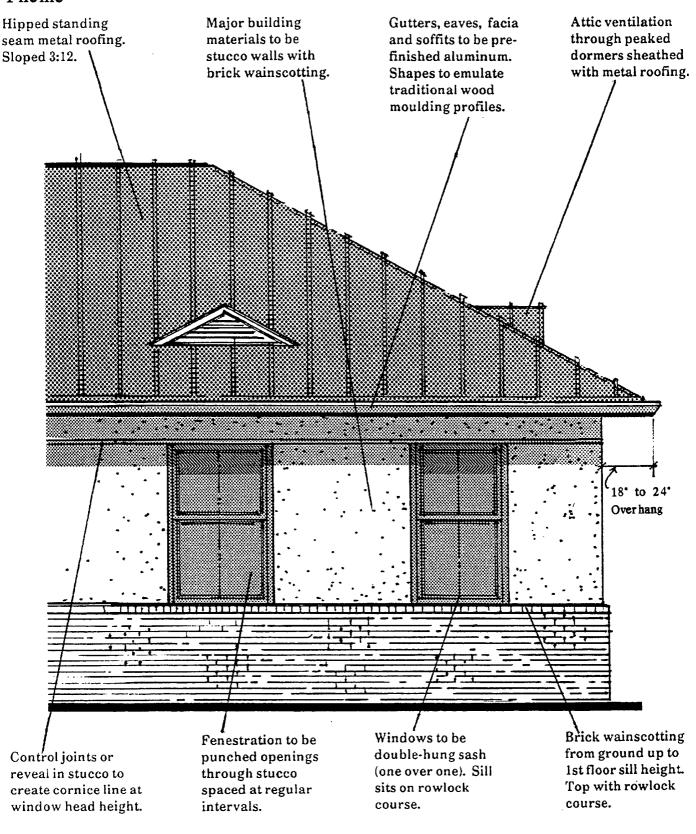
Detailing Contemporary Stucco & Brick Theme

GW TH TT TP OS CS

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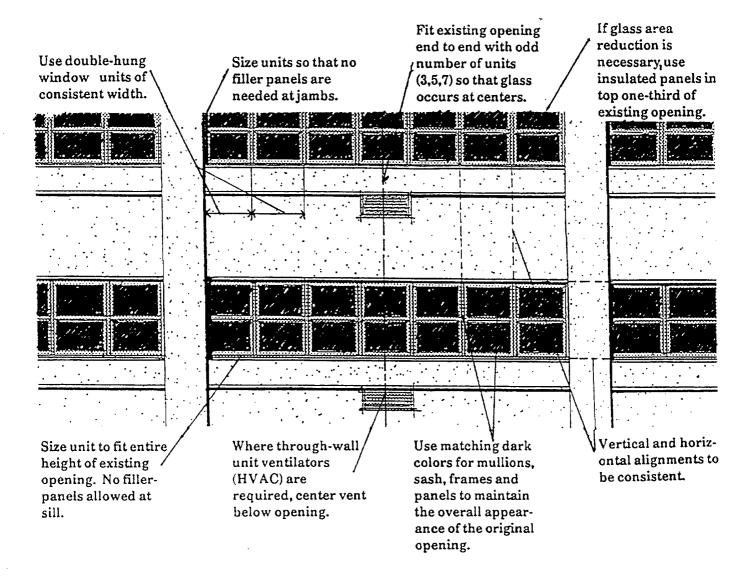
☐ CE

CS

2. Architecture

Fenestration--Replacement Horizontal Strip Windows

The overall appearance of horizontal strip windows is to be maintained where this style of fenestration already exists and windows require replacement. This can be accomplished by selecting matching dark colors for all non-transparent surfaces within the original opening, including mullions, sash, insulated panels, and flashing. From a distance, the overall opening will "read" rather than the individual window unit, and the pattern and proportions of the original building fenestration will be maintained. See DC 2.6 for color and material guidelines.



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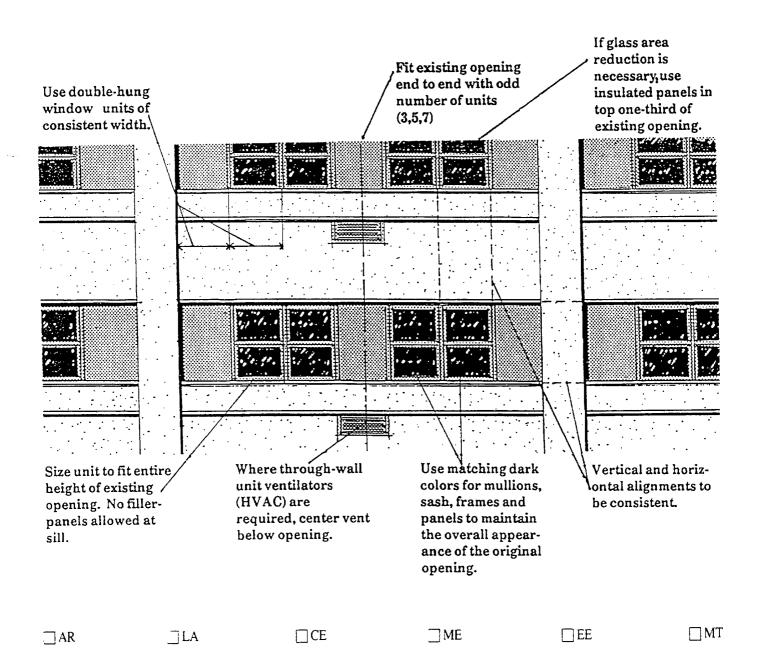
 \square AR

2.3.3

Fenestration--Replacement Horizontal Strip Windows

TH CS

The overall appearance of horizontal strip windows is to be maintained where this style of fenestration already exists and windows require replacement. This can be accomplished by selecting matching dark colors for all non-transparent surfaces within the original opening, including mullions, sash, insulated panels, and flashing. From a distance, the overall opening will "read" rather than the individual window unit, and the pattern and proportions of the original building fenestration will be maintained. See DC 2.6 for color and material guidelines.



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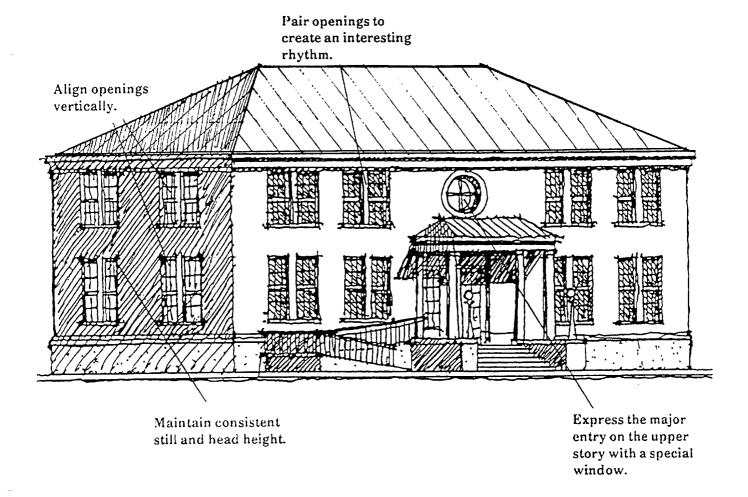
2. Architecture

Fenestration--Placement of Windows

GW TH TT TP SS OS FA FH CS

The rhythm, pattern and proportions of window openings are major factors in a building's design character.

Careful placement of windows is to be considered to reinforce the building's formality, particularly where the building is prominently located.



☐ ME

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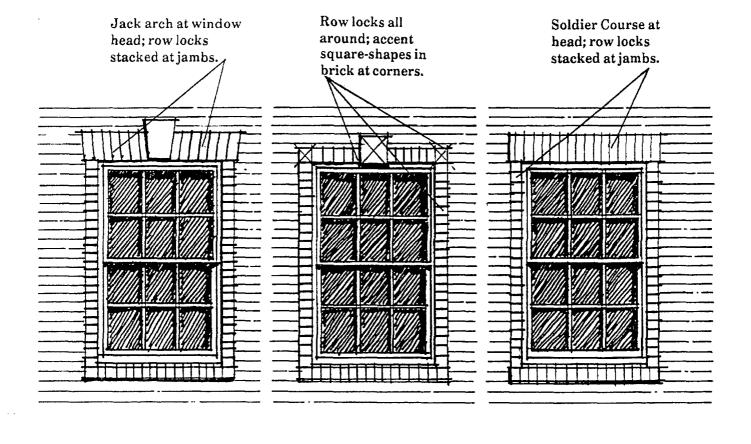
 \square AR

Detailing of Openings

GW TH TT FH CS

Brick buildings with carefully detailed openings have become the tradition in many areas of the post. New construction in these areas is to continue this design theme by the use of brick as a major building material, and the use of appropriately-detailed window and doorway openings.

Following are several examples of sill, head and jamb brick detailing. Where possible, match the style of openings used in existing adjacent buildings. Where no precedent exists, choose one of these examples.



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Important Building Entrances Vertical Articulation

To emphasize important entrances, special window(s) immediately above the entry doorway may be introduced.

Special detailing and the introduction of cast stone/limestone will add to the expression of the entrance.

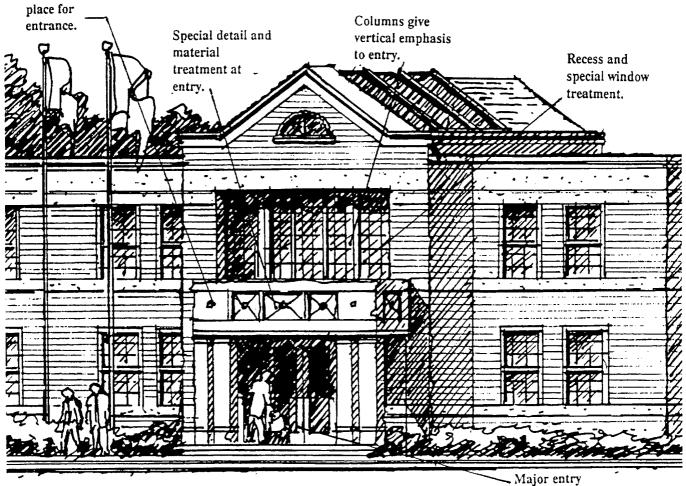
Portico creates a

Brick detailing may be used to extend the architectural expression of the first floor entry up into the second story, surrounding both the doorway and the window above.

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Vertical articulation of a single story bldg, entrance



Vertical articulation of a multi-story building entrance

Major entry doors should be emphasized.

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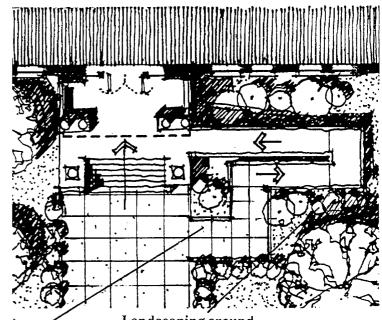
Ramps at Entrances

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Handicapped access ramps are to be placed to the side to allow for proper ramp distances without interrupting view of formal stairs and doorways.

Landscaping is to be used to screen the bulk of the ramp base, but allow visibility above railing height.

See ANS1 A117.1 (current revision) for specific ramp requirements.



Ramp leads
gracefully from base
of stairs to entry
portico.

Landscaping around base of ramp, and between ramp and building.



Conceptual Drawing Entrance

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Troop Barracks Entrances to Buildings

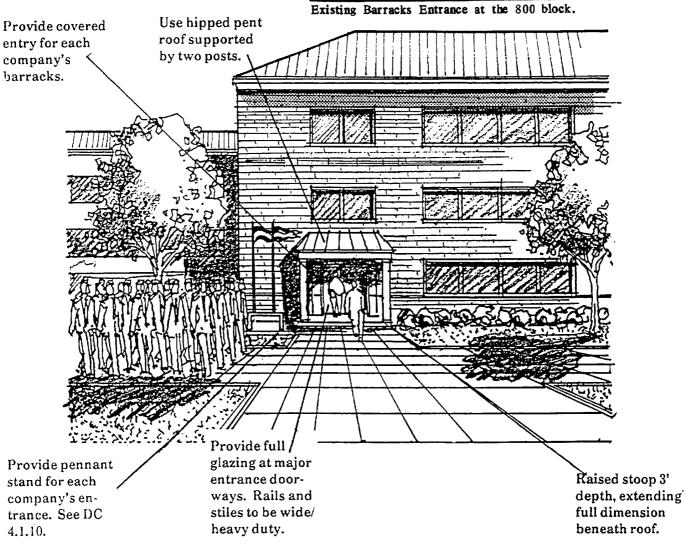
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The essence of the army installation, and the setting for some of the most intensive training experiences for the soldier, is the barracks compound. These buildings have the greatest potential to inspire pride, promote morale and increase productivity because they are the place that the troops live, wake and sleep.





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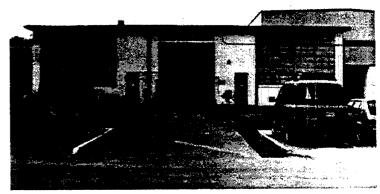
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Maintain

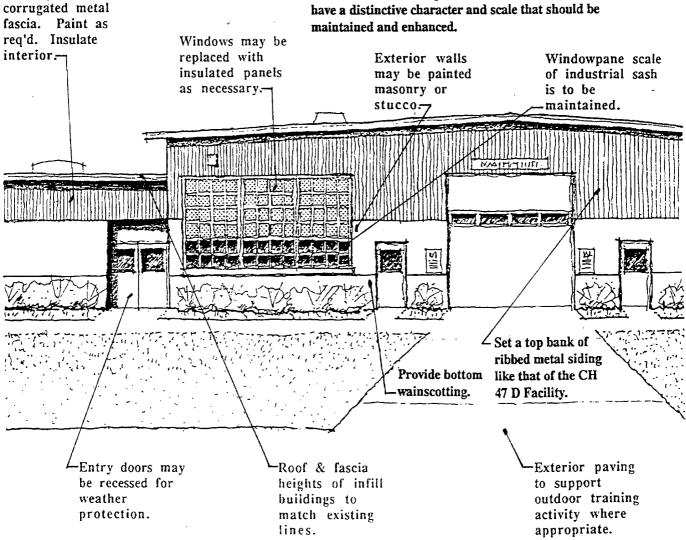
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Additions & Alterations Technical Training Center Buildings

The large industrial scale of the Bunker Training Area represents a major training mission of Ft. Eustis. Their scale and character are to be enhanced and reinforced through maintenance and renovations. New infill portions are to be designed to complement the existing buildings.



The industrial buildings of the Bunker Training Area have a distinctive character and scale that should be



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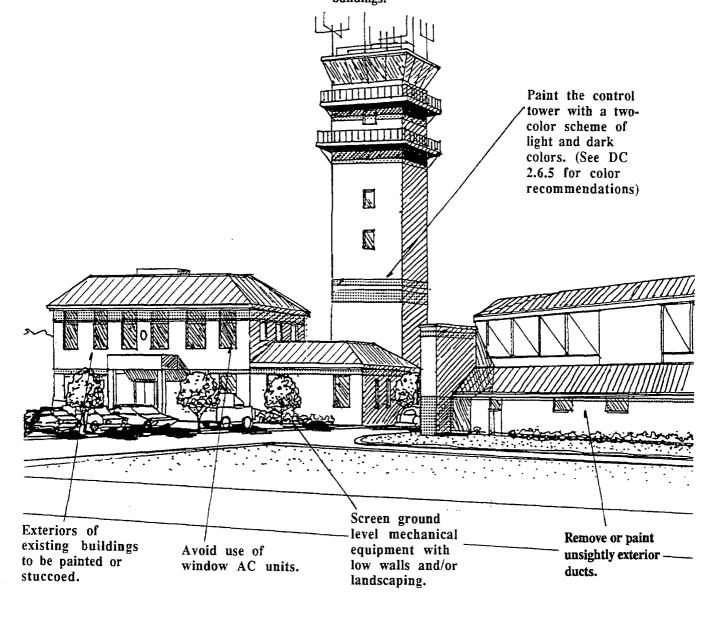
Airfield Structures Felker Army Airfield

FA

This is an area where maintenance and renovations will have the greatest impact. Buildings of dissimilar materials, designs and scales should be unified through a coordinated scheme of exterior finish colors. Treatment of windows and mechanical systems must be carefully controlled.



Careful treatment of windows, vents, air conditioning units and service areas will significantly improve the image of the airfield buildings.



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Alterations/Additions Securing Existing Openings

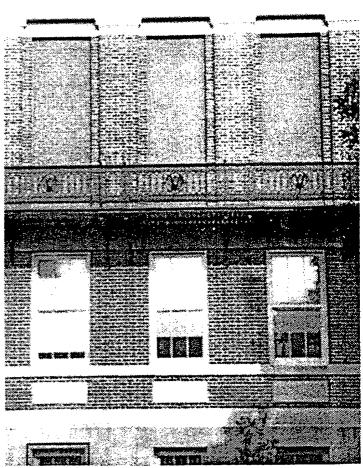
Where an existing brick masonry opening must be closed, allow the original profile of the opening to remain so that the overall effect of the building's fenestration will be preserved.

Do this by infilling with masonry to match the surrounding brick color, pattern, and coursing.

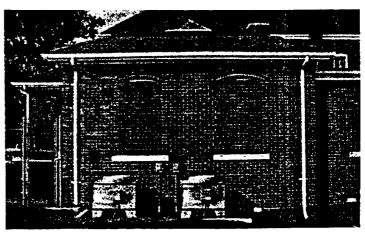
Infill masonry to be flush with or recessed back from surrounding wall plane.

Do not damage existing jambs, head or sill of masonry opening.

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Secured windows maintain scale of opening through recessed infill.



Secured windows are flush with wall plane, but maintain proportion of opening

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Materials and Colors: All Brick Theme

GW TH TT CS

	Materials	Colors		
Walls	Red brick, common size, running bond or common bond with soldier, sailor or rowlock courses for accent and trim.	Match brick and mortar color of Bldg. #210 throughout GW Zone. Match Bldg. #643 for brick and mortar color in Anderson Field House Vicinity. Match Bldg. #576 for Hospital vicinity, and Bldg. #1386 for PX vicinity.		
Cornices/trim	Limestone or cast stone for cornices, entablatures, coping, lintels, sills, and column capitals.	Natural limestone or cast stone to match Medusa.		
	Copper or prefinished aluminum trim for eaves, soffits, gutters, downspouts, etc.	Aluminum color to match Dark Bronze #46, CS/Kynar 500, as manufactured by Construction Specialties, Inc. Cranford, NJ (201) 272-5200.		
Doors & Windows	Prefinished steel or aluminum entry doors. Prefinished extruded aluminum or aluminum-clad window sash.	Aluminum finish to match #312 Medium Bronze anodized. Accent colors for entry doors may be used; match Redwood or Dark Ivy as manufactured by or equal to Kawneer, Norcross, GA (404) 449-5555.		
Roof	Standing seam metal roofing (aluminum or steel) prefinished.	Match <i>Dark Bronze</i> No. 46, CS/Kynar 500, as manufactured by Construction Specialties, Inc. Cranford, NJ (201) 272-5200.		
Glazing	Insulated glass for windows, doors, clerestories, transoms and skylights.	Color of glass to be clear or tinted neutral gray or sepia tones. Glass color samples are to be reviewed with other building materials including brick masonry to insure coordination. No mirror glass, bronze reflective glass, or green glass is to be used.		

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2.6.2

Materials and Colors: Stucco & Brick Theme

TH TT TP SS OS CS

	Materials	Colors		
Walls	Stucco with brick wainscotting up to first floor sill height. Running bond brick with rowlock course at top of wainscotting.	Stucco base color to match #5 Eggshell Cream as manufactured by Dryvit, Warwick, RI (401) 822-4100; #23 Chocolate. Malt may be used for trimcolor.		
Cornices/trim	Prefinished aluminum flashing, coping, facia, gutters and trim.	Match <i>Dark Bronze</i> #46, CS/Kynar 500, as manufactured by Construction Specialties, Inc. Cranford, NJ (201) 272-5200.		
Doors & Windows	Prefinished extruded aluminum or aluminum-clad window sash. Prefinished steel or aluminum entry doors.	Metal finish to match #312 Medium Bronze anodized. Accent colors for entry doors may be used; match Redwood or Dark Ivy as manufactured by Kawneer, Norcross, GA (404) 449-5555.		
Roof	Standing seam metal roofing (aluminum or steel) prefinished.	Match <i>Dark Bronze</i> #46, CS/Kynar 500, as manufactured by Construction Specialties, Inc. Cranford, NJ (201) 272-5200.		
Glazing	Insulated glass for windows, doors, clerestories, transoms and skylights.	Color of glass to be clear or tinted gray or sepia tones. Glass color samples are to be reviewed with other building materials including brick masonry to insure coordination. No mirror glass, bronze reflective glass or green glass is to be used.		

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2. Architecture

Materials and Colors: Family Housing Neighborhoods

FH

Materials

Walls

Brick and Siding for new construction. Vinyl siding may also be used for renovations and insulation.

For alterations and repairs, match or approximate original materials.

Note: Coordination of new materials and colors in existing neighborhoods is highly specific and must be carefully directed on a project-by-project basis.

Colors

Match existing colors and/or coordinate with existing permanent materials on neighborhood basis. A range of 2 or 3 pastel colors may be used within each neighborhood to provide variation and individual identity, e.g. match Autumn Yellow, Georgetown Blue and Willow Green vinyl siding as mfd. by Certainteed Corp., Valley Forge, PA (800) 638-3270.

Cornices/trim

Prefinished aluminum or vinyl.

Match siding colors.

Doors & Windows

Residential windows to be prefinished aluminum or aluminum-clad casement double-hung windows. Replacement sash to completely fill existing openings (no filler panels). Vinyl-clad sash may be considered as an option.

Baked enamel white or off-white; all units to match. Coordinate with entry door and other metal trim color.

Residential entry doors to be prefinished aluminum-clad insulated doors. 6-panel style is recommended for the front door; 9-light with two panels beneath for rear door. Vinyl-clad doors may be considered as an option.

Baked enamel white or off-white; match window sash color.

ered as an option.

Asphalt/Fiberglass blend shingles in

Color of shingle is to emulate the color of slate, which is a cool gray (tans and browns emulate the appearance of wood and are not recommended).

standard width and length.

Low-pitched roofs to have river gravel ballast over their existing b.u. roofing.

Insulated glass for windows, doors, clerestories, transoms and skylights.

Color of glass to be clear or tinted gray tones. Glass color samples are to be reviewed with other building materials including brick masonry to insure coordination. No mirror glass is to be used.

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Roof

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Materials and Colors: Applied Instruction Area

TT

Materials

Walls

Existing portions of corrugated metal fascia to be maintained. Matching corrugated metal sheathing or insulated panels to be used on new infill portions. Match proportions and heights of fascia/cornice lines. Use CH 47 "D" facility as a model.

Existing masonry may be painted or treated with an exterior insulation system to result in a stucco appearance. New infill portions to use painted masonry or stucco finish on lower portion of walls, up to fascia panels.

Doors and Windows

Entry doors and overhead doors to be as required for durability, etc. Glazing of entry doors with a view panel is recommended.

If existing industrial sash must be replaced, maintain the divided windowpane appearance by using translucent insulated panels such as Kalwal's panel (Manchester, NH (603) 627-3861), which have that appearance.

Colors

Match Sherwin-Williams EX-BM-1-32 for fascia panel color.

Match Dryvit No. 5 Eggshell Cream for stucco areas. Painted masonry to match. Dryvit No. 3 Brandywine may be used as an accent color in limited areas.

Entry door colors to match #312 Medium Bronze anodized. Accent colors for entry doors may be used; match Redwood or Dark Ivy as manufactured by Kawneer, Norcross, GA (404) 449-5555.

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2.6.5

2. Architecture

Materials and Colors: Third Port

TP

Materials

Walls

Existing masonry or metal panel wall systems are to be painted or, if necessary, may be treated with an exterior insulation system resulting in a stucco appearance.

New buildings, renovations and additions are to continue the theme of metal and masonry buildings. Metal panel walls with a masonry wainscotting or base are recommended. Metal panels should be of the vertical rib type, with ribs spaced 12 to 24 inches apart (such as Inryco's IW-21A wall panel, Inryco, Deerfield, IL (414) 383-4030).

Colors

Primary color to match Sherwin-Williams EX-BM-10-19 or Dryvit Dover Sky. A darker accent color may be used; match Sherwin-Williams EX-BM-10-22. (800) 321-8194.

Metal panel colors to match the color samples given above, or match Inryco Frost White or Silver Gray colors. Rustic Red may be used as a trim color for accent.

Doors and Windows Materials as required for durability, etc.

Entry door colors to match Inryco Silver Gray.

Accent colors may be used; match Inryco Rustic Red.

Large overhead doors to match wall color scheme (above).

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Walls

2.6.6 2. Architecture

Materials and Colors: Felker Army Airfield

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Materials

Existing masonry or metal wall systems are to be painted or, if necessary, may be treated with an exterior insulation system resulting in a stucco appearance.

Colors

Match Dryvit No. 5 Eggshell Cream for stucco areas. Painted masonry to match color of stucco.

Match Dryvit No. 23 Chocolate Malt for areas of darker accent color.

New buildings, renovations and additions are to continue the theme of stucco, painted block masonry and/or metal panel wall systems. Metal panel walls are to have vertical ribs spaced 12 to 24 inches apart (such as Inryco's IW-21A wall panel, Inryco, Deerfield, IL (414) 383-4030).

Metal wall panels to match Dryvit stucco colors.

Doors and Windows Materials as required for durability, etc.

Entry door colors to match #312 Medium Bronze anodized. Accent colors for entry doors may be used; match Redwood or Dark Ivy as manufactured by Kawneer, Norcross, GA (404) 449-5555.

Large hanger doors to match wall or wall accent color.

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Introduction

Soils

The soils at Fort Eustis are quite variable, ranging from loose sands to stiff clays. In the main cantonment area, a belt of stiff surface clay underlain by soft organic silts and clays, runs throughout in a northwestsoutheast direction. Stiff clays continue through the eastern part of the post, with layers of dense silty sands and shell fragments underneath. Pockets of organic matter have been found in buried stream valleys that extend out east to the Warwick River.

In the extreme western part of the post, within the location of Felker Army Airfield, soils are characterized by loose sands and organic deposits with an artesian water table. Because of these conditions, mat or pile conditions are required as necessary. Within the main cantonment, shallow foundations are generally sufficient.

In the middle and eastern parts of the post, the water table is approximately five to ten feet below ground surface. Due to a high water table, all surface pollutants should be kept to a minimum.

Vegetation

A large portion of Fort Eustis consists of existing forests and marsh areas. The forested areas surround much of the main cantonment and Felker Army Airfield, creating a well-defined edge to the developed areas. Marsh and low lying wetlands extend south of the main cantonment around Canal Ditch, Eustis Lake, Bailey Creek, and other post water areas.

The predominant native woodlands species is Loblolly Pine, which is used for cash lumber. Selective logging and replanting is involved in a Woodland Management

GW TH TT TP SS OS FA FH CS (1 of 2)



New plantings should complement existing mature trees.

Program, in which fifty-year-old trees are lumbered and replaced with four to six foot seedlings. It is recommended that logging areas be reserved out of high visibility areas, and that a 100 foot minimum setback be maintained along all roadway edges and development zones. Most of the woodlands areas have good surface drainage and adequate ground water reserves to maintain a good tree cover.

It is recommended that extending development into marsh and wetland areas be prohibited, and that indigenous plantings be used in zones of predominant native vegetation. Native grasses and understory plantings should be used at the existing forest edge, in a transition zone between native woodlands and planting used in developed areas. In areas to be cleared for development, leave a 50-100 foot tree buffer on the edges and leave clusters of existing plantings, where feasible.

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Introduction

The main cantonment is heavily planted in most areas, and much of the post has been recently planted in the last 10-15 years.

Predominant plant species used throughout the post include Willow Oak, Sweet Gum, Bradford Pear, Crape Myrtle, Crabapples, with some of the shrub species of Juniper, Bayberry, Japanese Holly, and Azaleas. Some of the roadways have desirable predominant species planted, which should be continued, such as Willow Oak on Washington Blvd., Sweet Gum and Oak on Jefferson Ave., and London Plane on parts of Lee Blvd.

Some areas are overly planted, such as at main entries into buildings, and, in other areas, plantings should be cleared to open up critical views, such as the pines along Washington Blvd. that block views of the Flagstaff and Transportation Museum. Since these plantings were originally used to screen existing warehouses, the removal of the warehouses will no longer require a planting screen; hence their removal would open up vistas to the museum and Seay Plaza. Certain species, such as Red Cedar, should be discouraged in use throughout the post. Care should be taken not to overuse certain species, such as the Bradford Pear.

Some good planting practices to continue include planted berms at the edge of some of the existing parking areas. Also, informal planting clusters and berming should be continued along the existing railroad track in the median of Washington Blvd.

Some new major planting areas that are included in the design criteria area are a major evergreen planting mass at the terminus of Washington Blvd., formal plantings at Seay Plaza, and along some of the major roadways on post. Additional areas requiring screening include steam lines throughout the post, Taylor Ave. warehouses, motor pool

GW TH TT TP SS OS FA FH CS (2 of 2)



Maintain a tree buffer on the perimeter of existing forest

storage (especially in the 800 area), and other major large parking lots. Some of the family residential areas, especially in the 100 and 300 blocks, will require additional plantings for grounds beautification and erosion control.

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3.1

Planting Street Trees

GW TH TT TP SS OS FA FH CS

Plant deciduous canopy trees in straight line flanking roadway.

Maintain consistent distance from centerline of roadway to tree, allowing for minor variations in cartway width where required.

Locate large shade trees so that they are not beneath utility wires which would interfere with the full growth of the trees' canopy of branches. Small ornamental trees (10-15 ft.) may be used beneath overhead utilities.

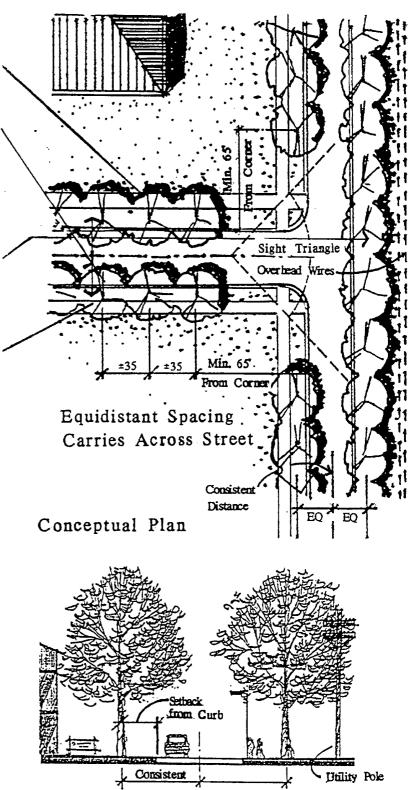
Wherever possible, locate trees between the wires and the street, so that the wires are less visible from the roadway.

Spacing of trees will be dependent on location of utilities, light fixtures, and on the species of the trees selected.

Recommended Minimum Setback from Curb/Edge of Road to Center Line of Tree•

Washington Boulevard min. 15'
Primary Roadway min. 10'
Secondary Roadway min. 10'
Tertiary or other min. 5'
Roadways

- Individual conditions and restrictions may affect placement of street trees (i.e. overhead wires, paved walkways, etc.).
- Maintain a clear line of sight at intersections free of any visual obstructions.



Conceptual Section

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Screening Parking--Planting & Berms

General Note:

In areas of high visibility, parking areas should be screened or visually buffered from roadways, housing and administrative buildings.

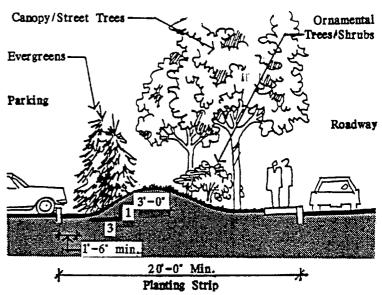
Bermed Planting Strip

An earth berm 3' high can be used to create a landscaped visual buffer. Planting should be placed at bottom or lower part of slope. Do not plant on top. Low maintenance ground cover should be used to cover remaining areas. Larger canopy street trees should be used closer to street. See DC 3.6 for recommended planting.

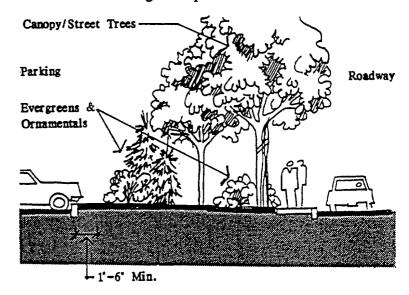
Planting Screen

A landscaped planting strip can be used to screen negative visual elements. Larger canopy trees should be placed closer to street with evergreens and ornamental shrubs forming a more consistent visual barrier. See DC 3.6 for recommended planting.

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Bermed Planting Strip



20'-0' Planting Strip Planting Screen

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Screening Parking--Low Walls

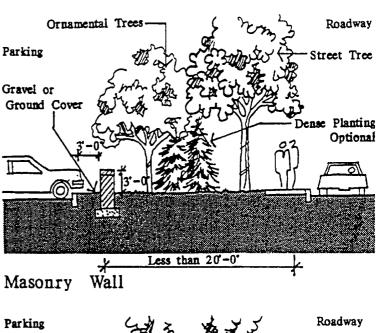
GW FH CS

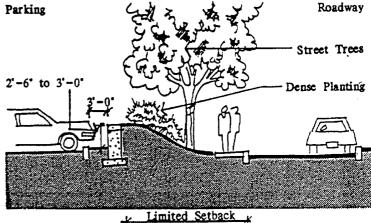
Masonry Wall

- In areas of high visibility where a 20' planting strip does not exist or when a wall is desired, place a 3' high brick wall to screen view of cars. Low evergreen planting is optional. See DC 3.6 for recommended planting.
- Gravel or ground cover should be used in area between wheel stop and wall.

Berm and Retaining Wall

- A retaining wall can be used to hold earth berm and planting where setback is very limited. Concrete or wood railroad ties can be utilized in the appropriate Visual Zone.
- Arrange planting in clusters on side of berm using a dense mix of plant material. See DC 3.6 for recommended planting.





Berm & Retaining Wall

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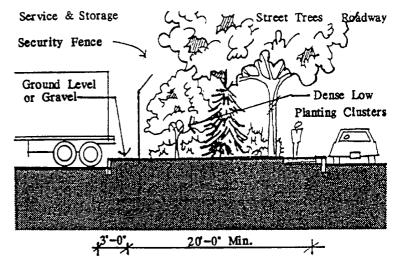
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Screening Secured Areas

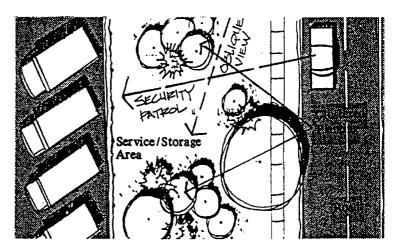
General Notes:

- Where chain link fencing is required and where visual access from the road for security purposes is required, a system of clustered dense planting allows security patrols to view at right angles the subject area but screens oblique views of the secured areas.
- Arrange planting in informal groupings or clusters. Use a mix of evergreen and deciduous species. See DC 3.6 for recommended planting.
- A low maintenance ground cover should be incorporated to reduce or eliminate mowing and upkeep.

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Planting Buffer Cross Section



Planting Buffer Plan(Shows Security Visibility)

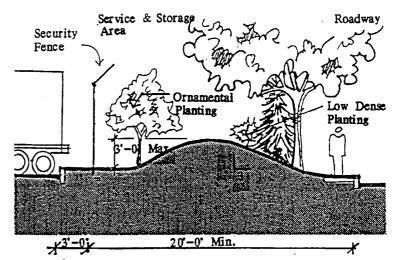
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Screening Secured Areas with Earth Berm

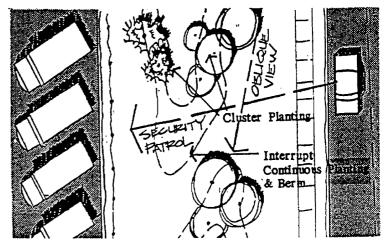
General Notes:

- Where chain link fencing is required and where visual access from the road for security purposes is necessary, an earth berm with planting can be introduced to provide a partial visual screen.
- By varying the location of clustered planting and interrupting the berm security, personnel can obtain a perpendicular view of the secured area from the road, while more oblique auto traffic views are screened.
- A low maintenance ground cover should be utilized on the berm. Larger planting should be located at edge and bottom of berm. See DC 3.6 for recommended planting.

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Berm & Planting Cross Section



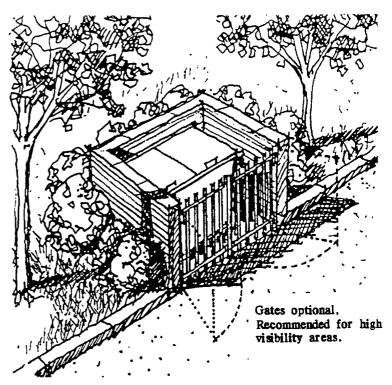
Berm & Planting Plan

Screening Dumpsters Masonry Wall

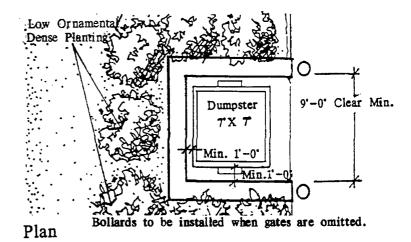
GW CS

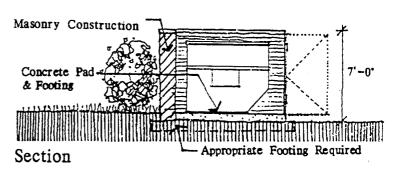
General Notes:

- In areas of extremely high visibliity in proximity to major buildings, a masonry (brick) dumpster enclosure should be introduced. In areas where the adjacent predominant building material is not brick, a compatible masonry material may be incorporated.
- A wood or preferably black metal hinged gate should be incorporated to further screen dumpster.
- A concrete pad and footing of appropriate size must be designed for the required load.
- If a larger dumpster is required, the dimension of the enclosure must be adjusted accordingly.
- A hose bib should be located in close proximity to the dumpster enclosure for cleaning purposes.



Masonry Dumpster Enclosure





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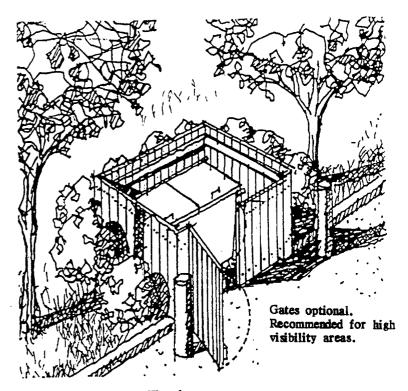
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Screening Dumpsters Wood Fencing

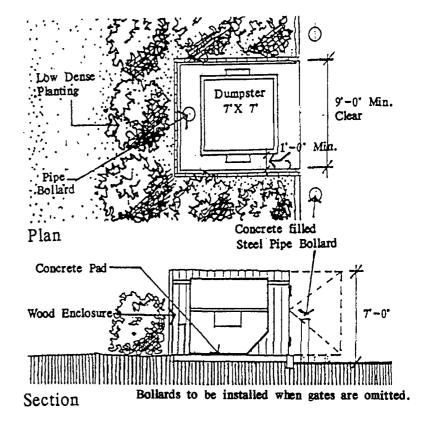
General Notes:

- In areas of high visibility, a wood screen wall is desired around dumpster.
- A 1" x 4" reinforced painted wood or pressure-treated wood screen is recommended (in a particular visual zone all dumpsters should have consistent finish).
- Concrete filled pipe bollards are recommended to help protect the wood structure and concrete pad.
- When a larger dumpster size is required, dimension should be adjust accordingly.
- Low dense planting is recommended around enclosure as illustrated.
- A hose bib should be located in close proximity to the dumpster enclosure for cleaning purposes.

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Wood Dumpster Enclosure



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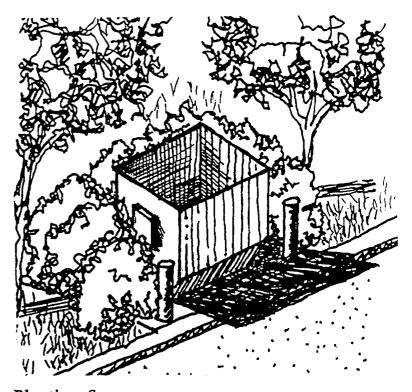
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Screening Dumpsters--Standard Planning

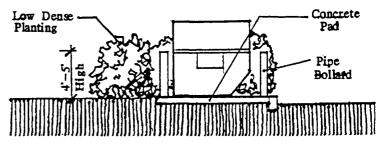
General Notes:

- In areas of lower visibility, a dense planting screen should be introduced to visually buffer the dumpster. See DC 3.6 for recommended planting.
- A concrete pad should be provided as well as concrete filled pipe bollards.
- Planting screen should be 4'-5' high and consist of maintenance free plant material, including evergreens.
- A hose bib should be located in close proximity to the dumpster enclosure for cleaning purposes.

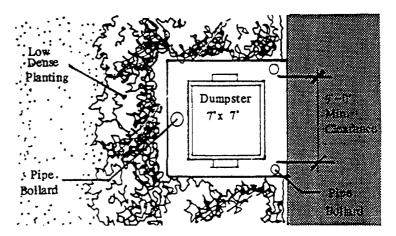
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Planting Screen



Section



Plan

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Locating Dumpsters

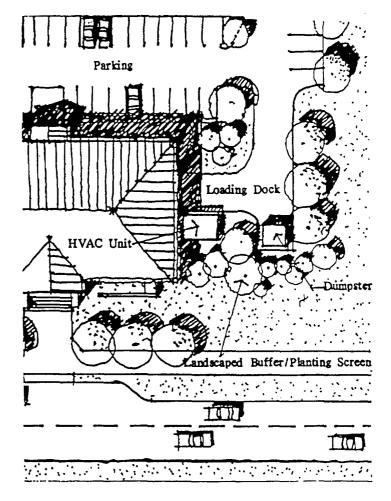
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General Notes:

- Dumpsters should be located, as required, adjacent to loading docks.
 Access by truck (front end loader) should be readily available.
- Screening, as described in DC 3.2.5 and 3.2.6, should be incorporated where appropriate.
- In areas of less direct visibility and in service areas, no structured screen is required.
- A concrete pad and landscaped buffer should be incorporated. See DC 3.6 for recommended planting.



Dumpsters must be carefully located to minimize visibility while allowing for truck access, unlike this example.



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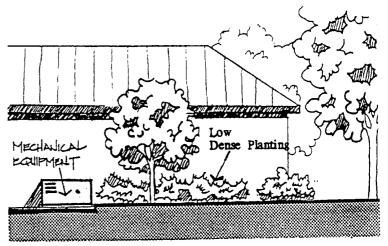
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Screening Mechanical Equipment

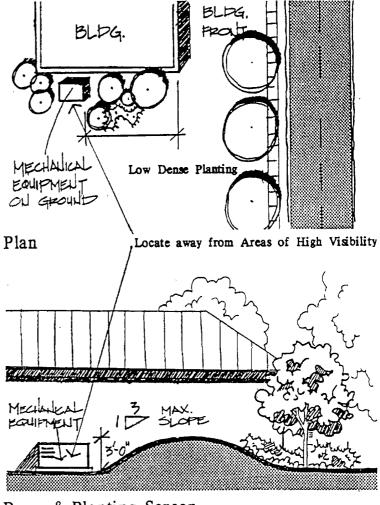
General Notes:

- TRADOC policy dictates that HVAC units should be located at grade on concrete pads adjacent to building wherever possible.
- In areas of high visibility, it is recommended that mechanical equipment should be located on top of building surrounded by a parapet or screen wall.
- Where it is not possible to mount HVAC equipment on top of buildings, it should be located at grade away from entrances and areas of high visibility.
- Units should be screened with low dense vegetation and earth berms if possible.
- Sufficient space should be provided for air circulation and easy maintenance.

GW TH TT TP SS OS FA FH CS



HVAC Screened by Planting



Berm & Planting Screen

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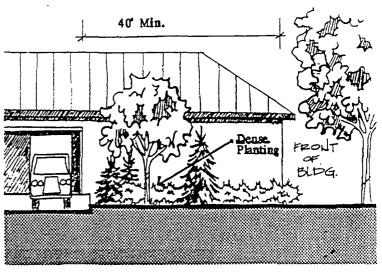
Screening Loading Docks

TH TT TP SS FA CS

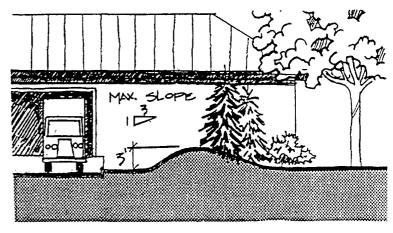
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General Notes:

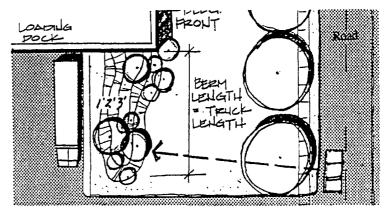
- Where loading docks abut a roadway or area of high visibility, an effort should be made to screen the loading dock from view. This is only appropriate in areas between incompatible zone uses.
- Landscaped buffer should include a variety of dense evergreen and ornamental planting, and should continue the length of the trucks using the dock. See DC 3.6 for recommended planting.
- In areas of extremely high visibility a landscaped buffer may also be introduced to improve the visual screening.



Landscape Visual Screen



Berm & Landscaped Screen Section



Berm & Landscaped Screen Plan

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Screening Loading Docks

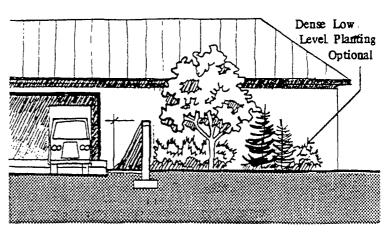
General Notes:

In areas of extremely high visibility, a 5 foot high masonry (brick) wall should be introduced to screen view of service docks and other incompatible building uses. If building material is other than brick, the screen wall should be constucted of the same or a compatible material. Dense low level planting is optional but desirable.

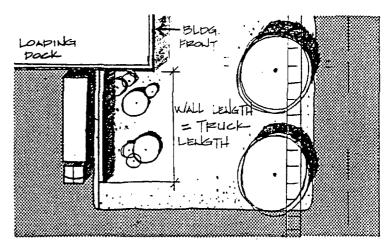
Where a limited setback distance exists, a combination of a retaining wall (concrete or wood railroad tie) and landscaping can be incorporated. See DC 3.6 for recommended planting. Berm should extend the length of loading dock area.

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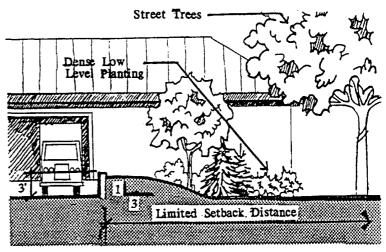
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Wall as Visual Screen-Section



Wall as Visual Screen -Plan



Retaining Wall & Berm Screen- Section

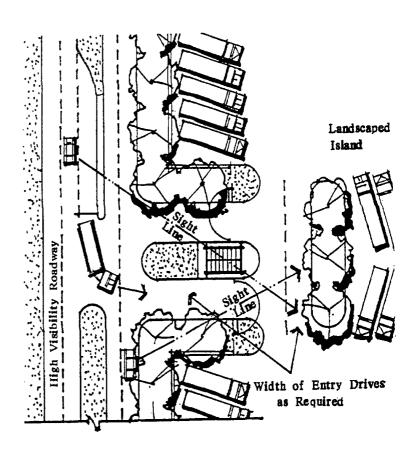
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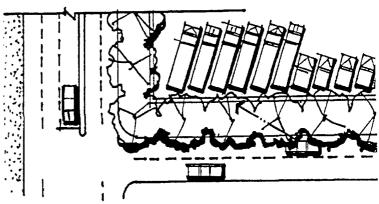
Motor Pool Entrance Area

GW TH TT TP SS

Where entrance gates to motor pool areas are accessed directly from high visibility roads (i.e. primary, secondary, or throughhighways), measures should be taken to provide proper access lanes and to screen direct views into the interior of the parking area.

- Provide, where possible, adequate channelized left-hand turning lane.
- Provide landscaped island for security booth.
- Set back fence and security fence 50 ft. (approx.) at entry.
- Provide landscaped island at interior to screen views through gate.
- Screen the edge of the motor pool. Set back the fence 30 ft. and plant screen.





Conceptual Plan

Seasonal / Overflow Parking Areas

TT SS OS CS

In certain locations, there is a need to accommodate seasonal peaks in parking demand without paving the area. This occurs at many of the community service facilities where special events or seasonal activities cause these occasional high parking demands. Examples include the swimming facilities and other summer recreational spots, the parade ground, and the picnic and overlook areas along the James River.

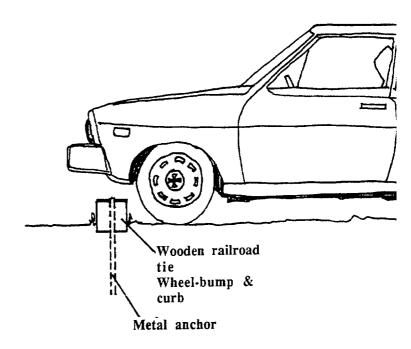
These areas should be edged with a curb of 6" x 6" treated wood railroad ties anchored with metal stakes. The dimensions and layout of the parking area are to follow standard design criteria for parking lots (See DC 1.7.1). Do not make lot larger than required. In existing gravel lots, resurface lots as required and provide a continuous wood curb to create a clean edge to the gravel surface.

In grass lots, turf is to be stabilized by a

mixture of gravel and earth which will allow

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Note: This design criteria is appropriate where parking is required near field training areas.

grass to grow while supporting vehicles in Paved roadway wet weather. Identification/dire ctional sign Wood curbs Stabilized turf Mow with grass. Note: In gravel as needed. lots, provide a continuous wood curb on perimeter to form a clean edge. Bollards to define entrance. See DC Spacing to define parking pattern

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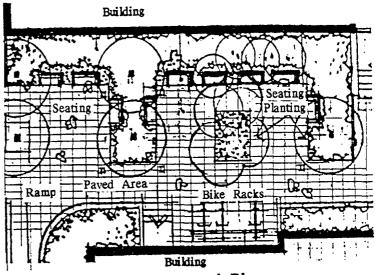
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Design Character--Plazas & Courtyards

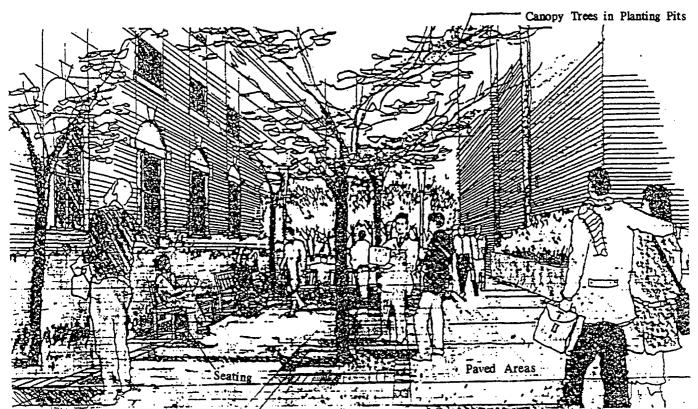
GW CS

General Notes:

- In areas of high visibility and intensive use, the spaces between buildings should be utilized as formal outdoor rooms.
- Planting, paving and seating should be utilized to create pleasant outdoor spaces for personnel to interact and relax. See appropriate Design Criteria for recommended materials.



Conceptual Plaza/Courtyard Plan



Conceptual View of Plaza Space between Buildings

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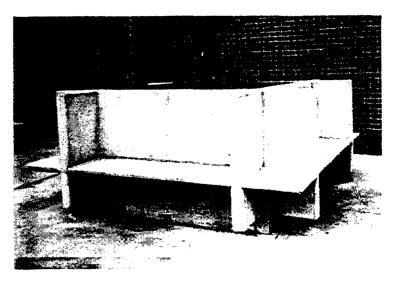
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Design Character--Plaza & Courtyards

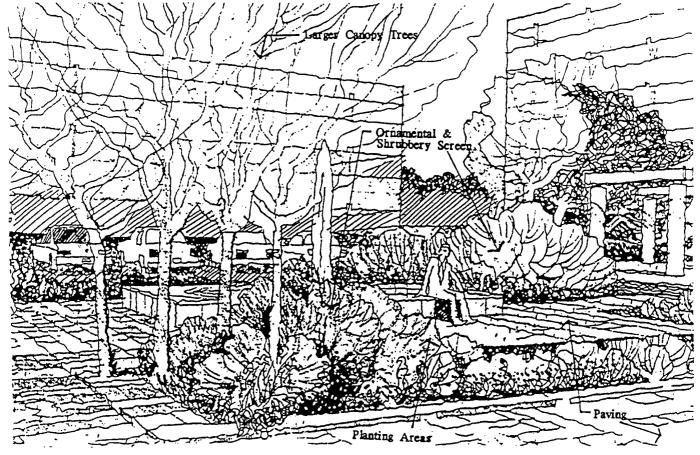
GW CS

General Notes:

- In high visibility and high activity areas, formal plaza space should be created to provide usable outdoor space.
- Planting should be used to define the edges of the space and break up large areas of paving. Large canopy trees should be used to provide shade, and low maintenance ornamental plantings should be used in planter areas. See Plant Matrix for recommended plant materials.
- Screen parking and service areas from plazas with low screen walls or with low evergreen hedges.



Well selected site furnishings would enhance the PX entrance plaza.



Conceptual Sketch of Plaza

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Planting/Entrances to Important Buildings

GW TT CS

To create a formal approach suitable for an important command building, align the sidewalk to the axis of the main entry. Do not place signs, plantings or other fixtures along that axis. Allow the pedestrian to approach the doorway walking along the centerline. Following the recommendations below for planting, lighting, etc.

Choose species Plant large canopy which will develop a trees away from canopy overhead building flanking and allow clear view of the building from sidewalk. eye level. -

at base of building.

Foundation planting Sidewalk on axis with entry.

Locate ramp to one/ side leading to the top of the stairs.

Locate seating to the side; set back from traffic flow.

Pedestrian-scaled lighting flanking sidewalk.

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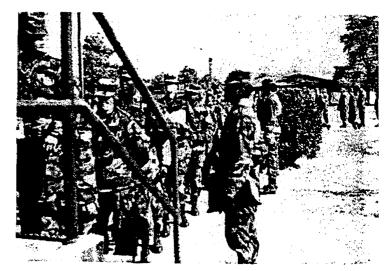
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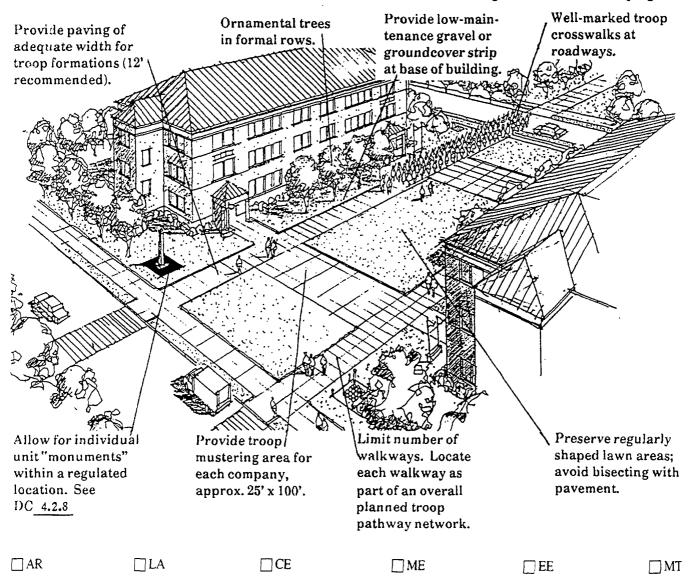
Design Character--Barracks Areas

TH

The design of landscaping, paving layout and site furnishings in the vicinity of troop barracks is of critical importance in support of the intense activity that routinely takes place there. All landscape and pavement materials should be of low maintenance and durable for high intensity use. Site furnishings should be selected for high use and longevity. Following are a series of recommended features which should be provided at each barracks.



Intense troop training activity demands special accommodations in the design of exterior landscaping.



Troop Barracks Entrance Areas

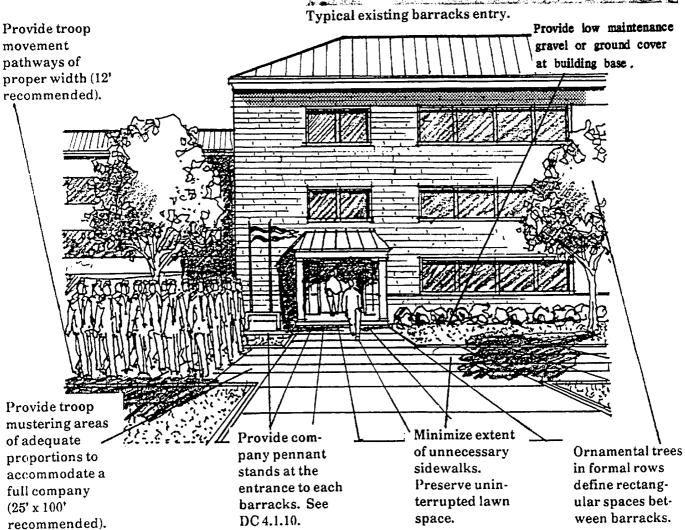
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The design of the environment immediately surrounding troop barracks is of critical importance. The intense concentration of troop activity there must be adequately served.





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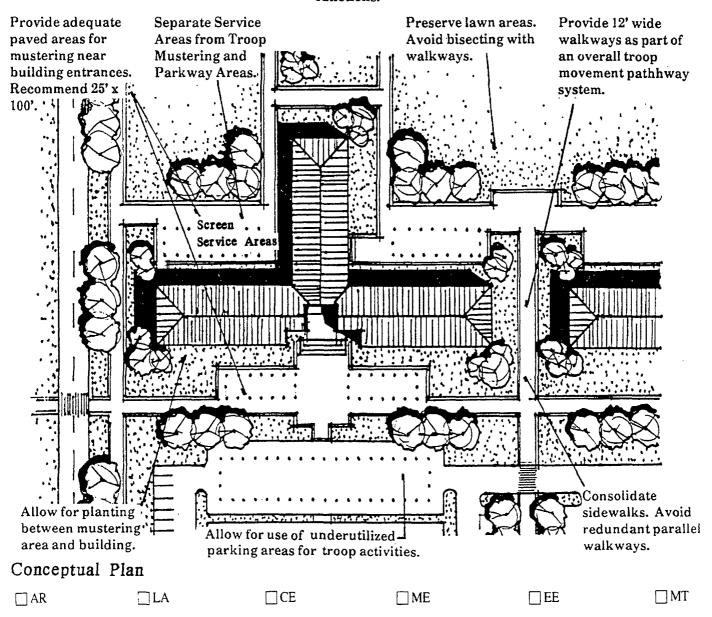
Troop Barracks Grounds

TH

Careful design of paving layout, plantings and site furnishings is of critical importance in these areas of intense troop activity. The specific needs of companies of foot soldiers are the focus of these design guidelines. They are to be adapted to specific conditions for both new and existing barracks areas.



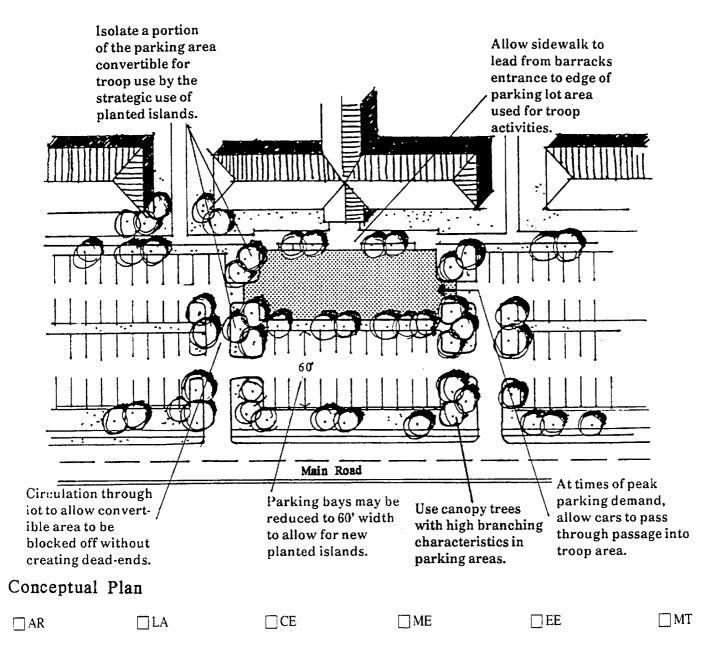
Frequently parking lots are used for troop training functions.



TH TT

Parking Lots Designed for Troop Mustering in Barracks Areas

When parking lots located next to barracks are not fully utilized for parking on a daily basis, they should be landscaped and paved in such a way to create a separate "convertible" area which can be easily blocked off for troop use. Peak demands for parking, such as special ceremonies, can be accommodated by opening up the separated aisle for parking. During offpeak periods, the aisle can be converted for troop use by drawing a chain across the entrance drive.



Troop Crossings at Major Roadways

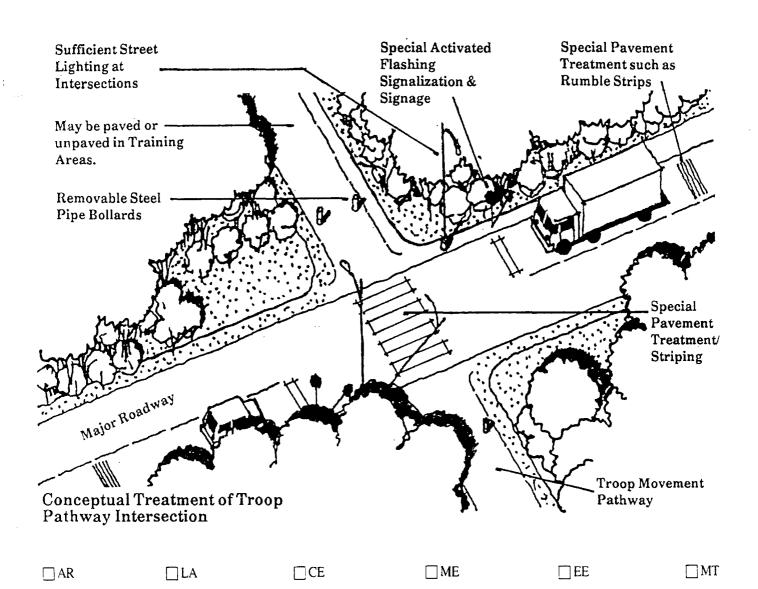
Safety is the primary concern at troop crossing points. These points must be clearly marked to command the attention of the motortist and to permit troops to easily and effectively control traffic.

The following design features should be used at all important troop crossing points. Specific designs and dimensions must be reviewed by a traffic engineer to insure safety.

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A Platoon of Trainees Crossing Roadway



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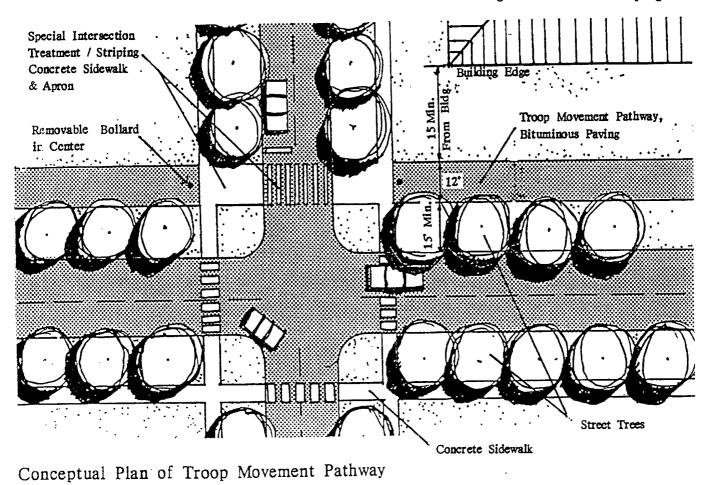
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Troop Movement Pathway-- GW TH TT TP SS CS Main Cantonment

A Troop Movement Pathway system should be established to link troop housing activity and training areas. A 12' wide bituminous pathway with special treatment at intersections should be developed. A removable steel pipe bollard should be located at the intersections, centered in the pathway, to obstruct vehicles using the pathway.



Intense troop training activity demands special accommodations in the design of exterior landscaping.



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Large Canopy

Trees

50' o.c.

Primary Troop Movement Path (e.g. Marshall Rd.)

TH TT FH

Marshall Rd. will become the major pathway for troop movement between the Bunker Training Area and 600/1000 block Barracks (Sheppard Place) and 800 block Barracks, within the Technical Training zone. Vehicular through traffic will be eliminated on Marshall Rd., except for limited one-way access to residential units from Madison Ave. All access to the 2700 block Motor Pool and the Steam Plant to the south should be kept from Washington Blvd. Provide paving, new street plantings, lighting, and furnishings according to the appropriate Design Criteria.

Relocate existing overhead utilities below ground (where feasible) Large Canopy Trees 50' o.c. Pathway Lighting (as req'd) Street Lighting 25' ht. Use Red/Brown aggregate mix for bituminous Pathway Vehicular Roadway 2 1/2' 2 1/2'

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15' Min. setback to

fences

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Parade Grounds & Review Stands

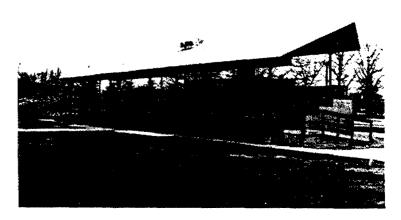
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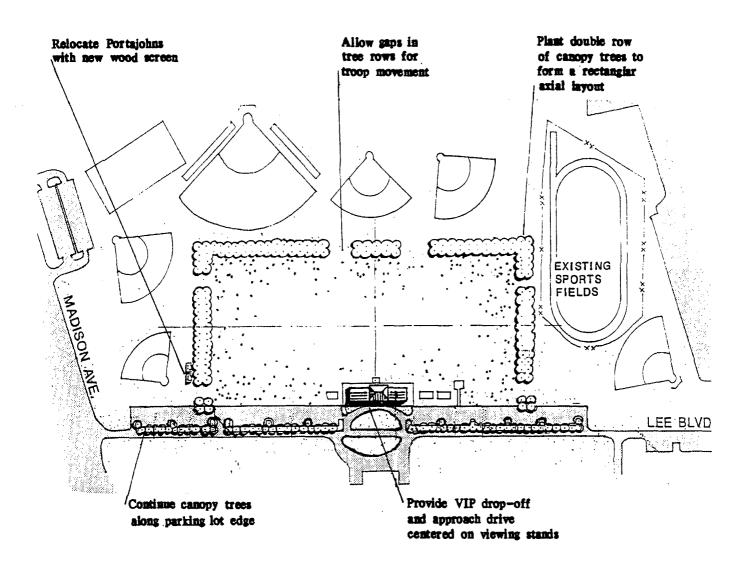
Parade grounds are to be landscaped as formal ceremonial spaces, set off from other open space by a frame of canopy trees. Adjacent buildings and athletic fields appear as distracting and inappropriate backdrops for the large scale formal drills on the parade ground. Set these other facilities and parking areas apart from the parade ground with deciduous and evergreen trees. The formal double row of trees (allée) is to frame the rectangular parade ground to set it apart from other open space and to create a grand outdoor "room" for the post's most important ceremonies.

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The viewing stands at Murphy Field could be improved with a new VIP drop-off.



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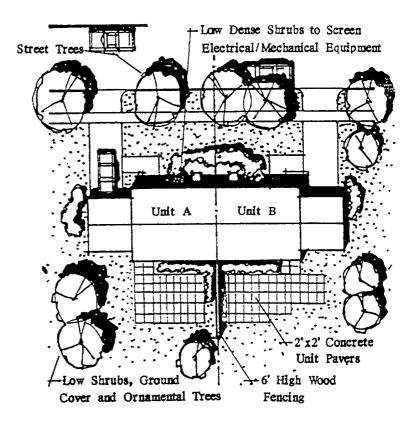
Family Housing Landscaping Improvements

FH

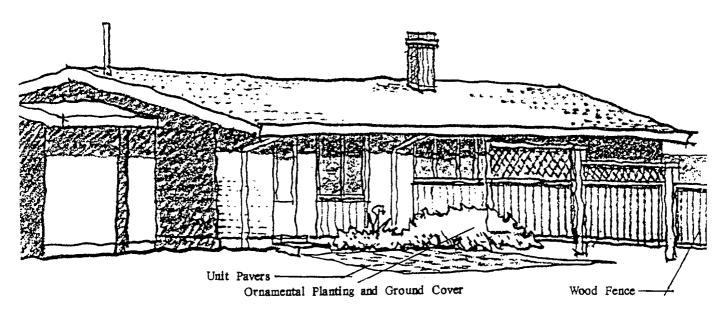
General Notes:

- Dense low evergreen shrubs should be used to screen mechanical and electrical equipment in front yards.
- Canopy trees should be introduced along tree lawns and planting strips.
- Unit pavers for patio areas and ornamental and shade plantings should be used in rear yards. Residents should be encouraged to customize their yards.
- Wood 6' high fencing should be used to divide rear yards and create a greater sense of privacy.

These criteria apply to existing and/or new twin type residential units, where a pair of units are attached, requiring special lefinition of the rear patio areas.



Conceptual Plan



Conceptual Sketch Rear Yard

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Housing Rear Yard/Patio Treatment

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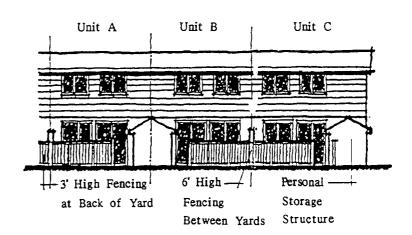
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General Notes:

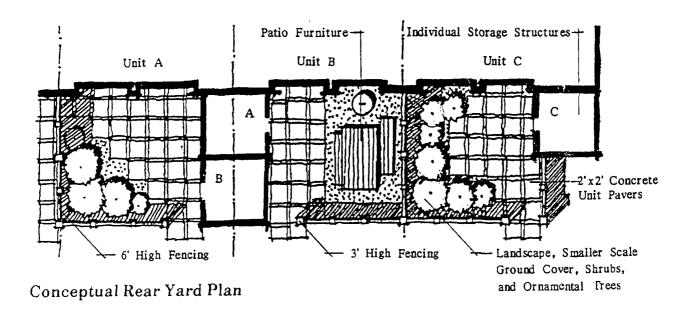
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- The rear yards of family housing units should provide more opportunity for individual treatment.
- Permanent storage buildings of similar materials and colors should be located to provide more private back yard spaces, as well as increased storage space for personal belongings.
- Concrete 2' x 2' max. size unit pavers should be utilized in conjunction with smaller scale landscape materials in back yard treatment.
- Residents should be encouraged to customize their individual yards.



Conceptual Rear Yard Elevation



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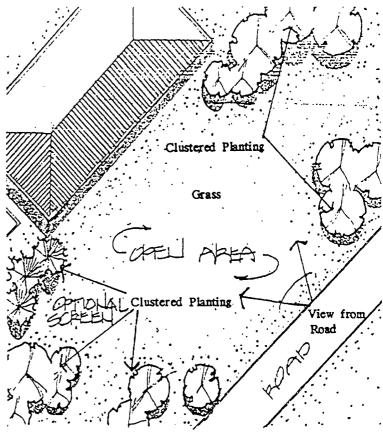
CE

Landscaping in Proximity to Buildings

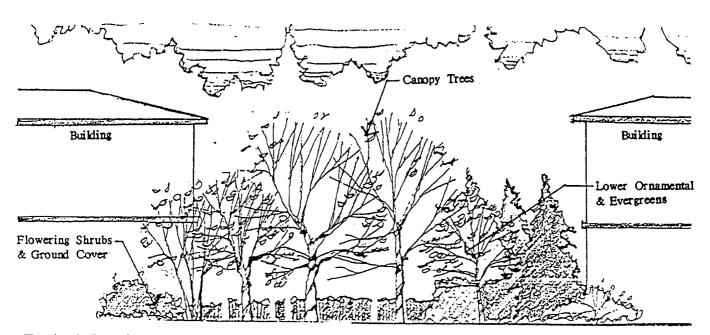
General Notes:

- The spaces between buildings should be of the character of the building architecture and unify the buildings within the visual zone. A variety of open lawn areas and clustered planting should be used to complement buildings, frame open areas, enclose views and add seasonal interest. See DC 3.6 for recommended planting.
- A mix of canopy trees and ornamental planting of varying sizes should be used. Group planting to form clusters with ornamentals in foreground, canopy and evergreen in background.
- Plantings should be strategically located for purposes of shade screening and ornamental interest.

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Conceptual Plan Layout



Typical Landscaping Between Buildings

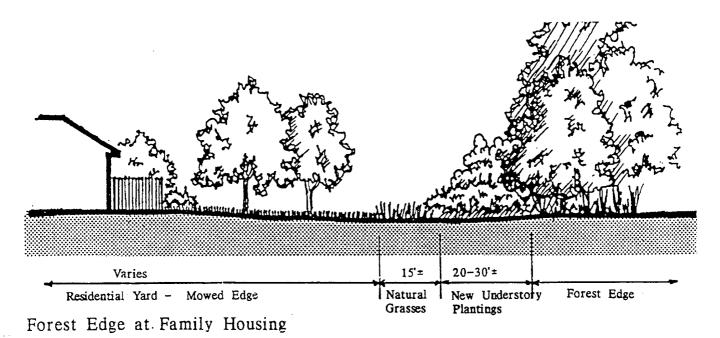
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Management of the Forest Edge

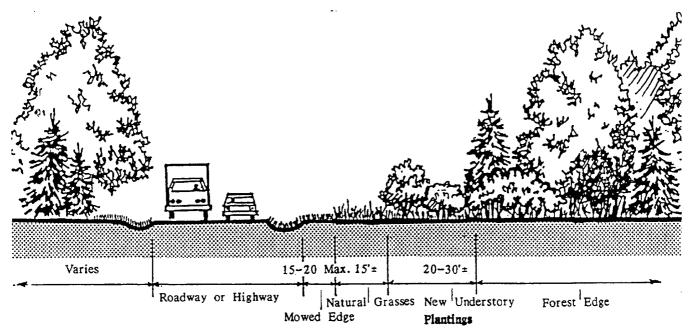
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(1 of 2)

Provide transition areas between residential yard areas and the existing forest edge with natural grasses and indigenous plantings. See DC 3.6 for plant list and grasses.



Minimize mowing and plant maintenance along roadway edges by using indigenous grasses and plantings 20 ft. from the roadway edge. See DC 3.6 for plant list and grasses.



Forest Edge along Roadways

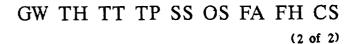
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Existing Tree Protection

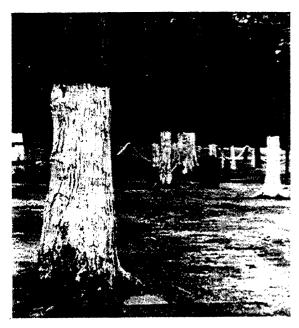
Plant maintenance appears to be well done in most areas on post. There are several locations (i.e. Enlisted Men's Barracks, Harrison Rd.) where bases of large mature trees are painted white. This practice should be prohibited in all areas on post. Tree protection may be provided through other means:

- In parking areas, curbed planter islands should be provided around all existing trees.
- In areas of high pedestrian volume, provide low shrubs and ground cover at the base of mature existing trees to prevent soil compaction around tree roots and for protection to tree bark.
- In other areas of vehicular circulation, curbs, bollards and chains, and low railing are alternate means of tree protection.





Prevent soil compaction around existing mature trees by well located pedestrian paths.



Painting tree trunks white should be prohibited throughout the Post.

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Introduction

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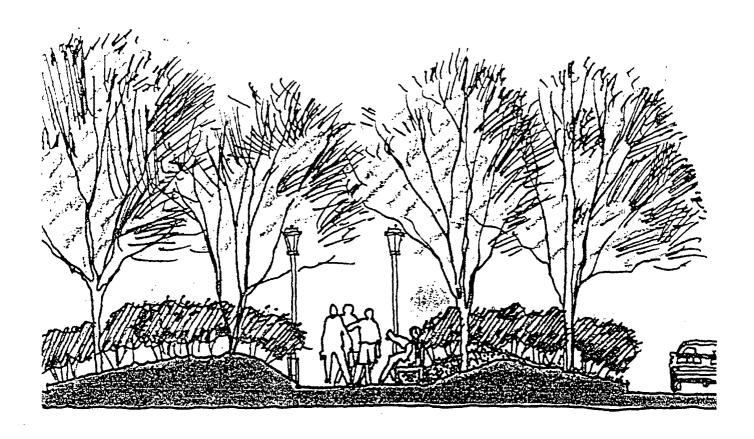
How to Use the Plant Matrix

The following PLANT MATRIX should be used in conjunction with a thorough investigation of the micro-climate of the specific planting project. This plant matrix should then be used as a guideline to developing a plant list for the specific project subject to review by the post horticulturalist. These are recommended species and do not necessarily preclude the selection of other species based on availability and cost or other factors.

The plant matrix is organized into plant categories of Trees (deciduous), Evergreen Trees, Ornamental Trees, Shrubs and Ground Covers. The applicable criteria checklist to the right of the species will tell the user the following information:

Type (Indigenous, Deciduous, Evergreen)
Visual Zone (appropriate application)
Application (how the plant can be used)
Exposure (degree of sun, shade)
Soil (tolerable plant medium)

The post horticulturalist or design professional may use this list as an inital guide, and apply other design criteria for selection and location on a planting plan.



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Plant Matrix

GW TH TT TP SS OS FA FH CS

1 of 7

Botanical Name
Common Name

TREES

Acer ginnala Amur Maple

Acer palmatum
Japanese Maple

Acer platanoides Norway Maple

Acer rubrum Red Maple

Carpinus caroliniana American Hornbeam

Celtis occidentalis Hackberry

Cercidiphyllum japonicum Katsura Tree

Fagus grandifolia American Beech

Fraxinus pennsylvanica Green Ash

Gleditsia triacanthos Honey Locust

Liquidambar styraciflua Sweetgum

Nyssa sylvatica Sour Gum

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Deciduous	Evergreen	Indigenous	GW	TH	LL	TP	SS	SO	FA	FH	CS	Shade	Street Tree	Ornamental Interest	Screen	Broslon Control	Sun	Partial Shade	Shade	Dry	Moist	Adaptable	Saft Tolerant
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Llant Matrix

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Botanical Name

Common Name

TREES (continued)

Platanus acerifolia London Planetree

Quercus acutissima Sawtooth Oak

Quercus borealis Northern Red Oak

Ouercus coccinea Scarlet Oak

Quercus 'darlingtonia' Darlington Oak

Quercus palustris Pin Oak

Quercus phellos Willow Oak

Quercus virginiana Live Oak

Sophora japonica Japanese Scholartree

Taxodium distichum Bald Cypress

Tilia cordata
Little leaf Linden

Zelkova serrata Japanese Zelkova

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Deciduous	Evergreen	Indigenous	GW	ТН	TT	TP	SS	SO	FA	FH	cs	Shade	Street Tree	Ornamental Interest	Screen	Eroston Control	Sun	Partial Shade	Shade	Dry	Moist	Adaptable	Selt Tolerant
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3 of 7

Botanical Name

Common Name

ORNAMENTAL TREES

Amelanchier canadensis Downy Shadblow

Cercis canadensis American Redbud

Chionanthos virginicus
White Fringetree

Cornus kousaKousa Dogwood

Crataegus phaenopyrum Washington Hawthorn

Lagerstroemia indica Crapemyrtle

Malus species
Flowering Crabapples

Magnolia grandiflora Southern Magnolia

Magnolia soulangeana Saucer Magnolia

Magnolialia stellata Star Magnolia

Magnolia virginiana Sweet Bay Magnolia

Oxydendrum arboreum Sourwood

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Deciduous	Evergreen	Indigenous	GW	ТН	TT	TP	SS	SO	FA	FH	cs	Shade	Street Tree	Ornamental Interest	Screen	Brosion Control	Sun	Partial Shade	Shade	Dry	Molst	Adaptable	Salt Tolerant
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Plant Matrix

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4 of 7

Botanical Name

Common Name

ORNAMENTAL TREES (continued)

Prunus serrulata kwanzan Kwanzan Cherry

Pyrus calleryana 'Bradford' Bradford Pear

EVERGREEN TREES

Ilex opaca American Holly

Juniperus virginiana Eastern Redcedar

Picea abies Norway Spruce

Pinus strobus White Pine

Pinus taeda Loblolly Pine

Pinus thunbergii Japanese Black Pine

T	Type			,	Vi	su	al	Z	201	ne			A	pp	1.		E	Exp).		Sc	il	
Deciduous	Evergreen	Indigenous	ΦĐ	TH	TT	TP	SS	SO	FA	FH	cs	Shade	Street Tree	Ornamental Interest	Screen	Brosion Control	Sun	Partial Shade	Shade	Dry	Moist	Adaptable	Salt Tolerant
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Plant Matrix

GW TH TT TP SS OS FA FH CS

5 of 7

Botanical Name

Common Name

SHRUBS

Abelia grandiflora Glossy Abelia

Azalea species Azalea

Cornus stolonifera Yellowtwig Dogwood

Cotoneaster species Cotoneaster

Euonymous alatus Winged Euonymous

Forsythia 'Arnold Dwarf' Dwarf Forsythia

Ilex crenata species
Japanese Holly

Ilex cornuta 'burfordi' Burford Holly

Ilex glabra Inkberry

Ilex verticillata Winterberry

Ilex vomitoria nana Dwarf Yaupon Holly

Juniper species
Juniper

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T	УĮ	e			Vi	su	ıal	Z	Zoi	ne			A	pŗ	ol.		E	Zxj	p.		Sc	il	
Deciduous	Evergreen	Indigenous	ΦĐ	TH	TT	TP	SS	SO	FA	FH	CS	Shade	Street Tree	Ornamental Interest	Screen	Brosion Control	Sun	Partial Shade	Shade	Dry	Moist	Adaptable	Salt Tolerant
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Plant Matrix

GW TH TT TP SS OS FA FH CS

6 of 7

Botanical Name

Common Name

SHRUBS (continued)

Ligustrum lucidum Ligustrum

Ligustrum obtusifolium Regal Privet

Mahonia bealei Leatherleaf Mahonia

Myrica cerifera Southern Waxmyrtle

Pieris japonica Japanese Pieris

Pinus mugo Mugo Pine

Rhododendron species Rhododendron

Syringa vulgaris Common Purple Lilac

Taxus cuspidata Japanese Yew

Viburnum species Viburnum

T	уp	е		•	Vi	su	al	Z	OI	ne			Α	pp	1.		E	XĮ).		So	il	
Deciduous	Bvergreen	Indigenous	GW	ТН	TT	TP	SS	SO	FA	FH	CS	Shade	Street Tree	Ornamental Interest	Screen	Brosion Control	Sun	Partial Shade	Shade	Dry	Moist	Adaptable	Salt Tolerant
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3. Landscape

3.6

Plant Matrix

GW TH TT TP SS OS FA FH CS

7 of 7

Botanical Name

Common Name

GROUND COVER

Ajuga reptans Ajuga

Euonymous radicans coloratus Wintercreeper

Hedera helix English Ivy

Juniper species
Juniper

Liriope spicata Lilyturf

Pachysandra terminalis Japanese Spurge

Vinca minor Periwinkle

T	УĻ	е	Visual Zone										A	pŗ	1.		E	Zx	ο.	Soil			
Deciduous	Evergreen	Indigenous	В	TH	TT	TP	SS	SO	FA	FH	CS	Shade	Street Tree	Ornamental Interest	Screen	Brosion Control	Sun	Partial Shade	Shade	Dry	Molst	Adaptable	Sait Tolerant
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Paving Materials

GW TH TT TP SS OS FA FH CS

(Page 1 of 2)

Paving Mater Application	ial /			Vi	sua	1 Z	one	3		i	Installation / Finish			
	<u> </u>	GW	ТН	TT	TP	SS	os	FA	FH	CS				
1. Brick Pavers	1.A. Ceremonial Plaza										1A.&B. Recommended PatternRunning Bond for General Use			
	1.B. Entrance Plazas/ Courtyards	•	•							•	Mortar Joints Heavy Pedestrian Use			
											Concrete Base with Mortar or Bituminous Setting BedHeavy Pedestrian Use/Vehicular Access			
2. Concrete Pavement	2.A. Walkways General Pedestrian Use	•								•	2A. Broom finish or aggregate surface (brown/tan aggregate) for nonslip finish, with smooth trowel edging within scoring.			
	2.B. Service Areas/ Truck Dock		•	•	•	•	•	•	•	•	2B. Use appropriate thickness for use. Light broom finish for nonslip surface.			
3. Unit Pavers	3. Entrance Plazas/ Courtyards		•		•						3. Precast concrete or asphalt pavers. Optional brick edging to match adjacent buildings.			

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3.Landscape

Paving Materials

GW TH TT TP SS OS FA FH CS

(Page 2 of 2)

Paving Mater Application	ial /			Vi	sua	.1 Z	one	3			Inst	allation / Finish
		GW	ТН	TT	TP	SS	os	FA	FH	CS		
4. Asphalt Pavement	4.A. Troop Movement Pathways & Spine	•				•				•	4A.	Use a red or brown colored aggregate in mix to differentiate from pedestrian and roadway pavements.
	4.B. Roadways/ Service Areas	•	•	•	•	•	•		•	•	4B.	Use the appropriate thickness for heavy vehicles.
	4.C. Bikeways	•	•	•	•	•		•	•	•	4C.	Use a light colored aggregate in mix to differentiate from roadway pavement.
	4.D. Sidewalks in Training and Recreational Areas		•	•	•	•	•	•		•	4D.	See 4A.

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Site Furnishings Matrix

GW TH TT TP SS OS FA FH CS

(Page 1 of 2)

The following matrix is a summary of the site furnishings to be used on post within the appropriate visual zones. Refer DC 4.1.1 to 4.1.11 for specific manufacturers, and to pages 4.2.1 to 4.2.8 for specific applications. The three columns contain the following information: Item (general description), Visual Zone (which visual zones each furnishing is used within), Application (specific application within visual zone). Though there may be exceptions to application and visual zone, the matrix may be used as a general guide, followed by more detailed information on selection and location in each particular application.

	Item			Vi	sua	1 Z	one	e -	-		Application				
		G₩	TH	TT	TP	ss	os	FA	FH	cs					
1.	Benches/Tables														
	A. Wood-Curvilinear Form with Metal Supports	•	•				•		•	•	1A. General use throughout, especially in areas of public use				
	B. Backless Wood Bench, Metal Supports		•	•	•	•	•	•	•		1B. Other less visible areas, especially in training areas				
	C. Picnic Table				:		•		•	•	1C. Recreational areas				
2.	Bollards														
	A. Steel Pipe with Ball and Cap, Black	•	•							•	2A. Highly visible areas throughout post				
	B. Wood						•		•		2B. Recreational and housing areas				
	C. Conc. Filled Pipe, Ptd. Black	•	•	•	•	•	•	•	•	•	2C. Service areas and less visible areas				
3.	Trash Receptacles														
	A. Metal Receptacle, Formal Design	•								•	3A. Areas of high visibility				
	B. Metal Receptacle, Utilitarian Design	•	•	•	•	•	•	•	•	•	3B. General usenear seating areas				
			1	<u> </u>		<u> </u>	.L	1		Т.	_				

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Site Furnishings Matrix

GW TH TT TP SS OS FA FH CS

(Page 2 of 2)

Item					Vi	sua	l Z	one	3		Application				
			GW	TH	TT	TP	SS	os	FA	FH	cs				
4.	Fen	ces													
	A.	Metal Picket	•									4A.	High visibility areas requiring security		
	B.	Wood Screen	•	•				•		•		4B.	General screening		
	C.	Chain Link Black Vinyl		•	•	•	•	•	•	•	•	4C.	High security in areas of high visibility where Metal Picket is not feasible.		
	D.	Sidewalk Railing			•							4D.	As required		
	Pho	one Booths													
	A.	Extruded Aluminum Kiosk	•	•								5A.	Areas of high public use		
	Bus	s Shelters													
	A.	Rectangular Aluminum Frame with Wood Seat	•	•	•	•	•		•	•	•	6A.	As required		
	Fla	gpole													
	A.	Standard Pole	•	•	•	•			•		•	7A.	Key ceremonial areas, as required		
	В.	Pennant Holder		•	•							7B.	As required		
).	Dri	inking Fountain													
	A.	Standard Cast Iron/Steel Fountain	•	•	•	•		•		•	•	8A.	Areas of high use & visibility		
	В.	Handicap Pedestal- mounted Fountain	•	•							•	8 B .	As required near seating		
€.	Bio	cycle Racks		$oxed{}$											
	A.	Simple Ribbon RackBlack	•	•	•	•	•	•	•	•		9 A .	Locate at building entries out of main circulation patterns		

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Furnishing Selection General Notes

The following descriptions (DC 4.1.1 to 4.1.11) identify each furnishing to be used within each visual zone. Though it is not required that the specific manufacturer be used, if substitutions are made the furnishings selected should match the specifications of the model shown as closely as possible.

The section is arranged in the following way:

Item:

(Generic description

of furnishing to be

used)

Material:

(of the major

components)

Color:

(of the major

components)

Form/Style:

(General description)

Application:

General location and

specific visual zones

As manufactured

by or Equal to:

(Selected

Manufacturer or first

choice of

manufacturers)

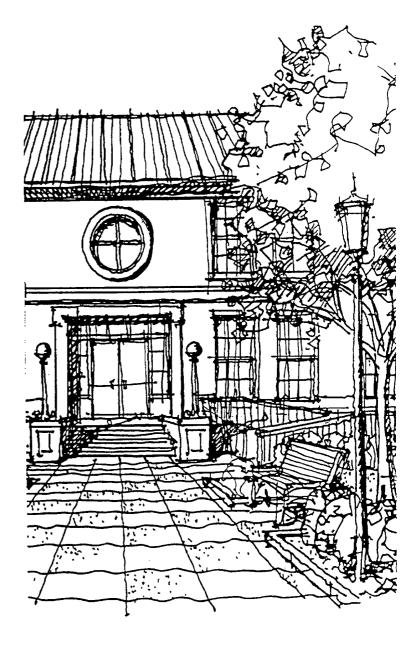
Model No.:

Most current model number available at the

time of the brochure

printing)

GW TH TT TP SS OS FA FH CS





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4.1.1

4. Site Furnishings

Furnishing Selection

GW TH TT TP SS OS FA FH CS

Benches/Tables

1.A

Contour Bench

Material:

Wood seat and back with

metal supports

Color:

Natural wood color, black

metal parts

Application:

General use in public areas

throughout post. Zones: GW, CS, FH, OS

As

manufactured by or equal

to:

Landscape Forms/LfI

431 Lawndale

Kalamazoo, Michigan

49001

800-521-2546

Model No .:

Timberline 3.13

(Redwood or Red Oak) 313PE2572 POE:

Support (Square, tubular

embedded)



Contour Bench 1.A

Furnishing Selection

TH TT TP SS OS FA FH

(See Site Furnishing Matrix)

1.B

Backless Wood Bench

Material:

Wood seat, metal pedestal

Color:

Natural wood color, black

metal

Form/Style:

Simple, wood slat seat

with embedded pedestal

Application:

Zones: TH, TT, TP, FA,

55

As

manufactured by or equal

to:

Landscape Forms/LFI

431 Lawndale

Kalamazoo, Michigan

49001

800-521-2546

Model No .:

Forum 39 PE 1972

Redwood, PDE Support

(square tubular embedded)

1.C

Picnic Table

Material:

Pressure-treated wood top

and seats, galvanized pipe

supports

Color:

Natural wood color,

galvanized pipe supports

Form/Style:

Two seats per table, single

pedestal

Application:

Zones: FH, OS

As

manufactured

by or equal

to:

Gametime

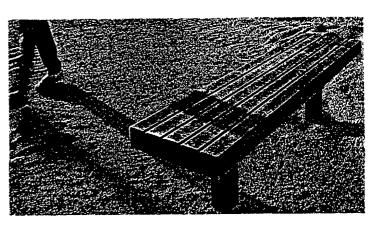
P.O. Box 121 Fort Payne Alabama 35967

205-845-5610

Model No .:

No. 795, 6ft. Single Post

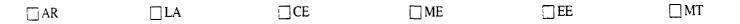
Picnic Table



1.B Backless Wood Bench



1.C Picnic Table



Furnishing Selection

GW THOS FH CS

(See Site Furnishing Matrix)

2.A

Metal Bollard

Material:

Steel Pipe with Steel Ball

& Cap

Color:

Black

Form/Style:

Traditional pipe with ball

Application:

General use for any area

requiring circulation

control.

Zones: GW, OC, TH

As

manufactured

by or equal

Make and installation on

Post 3 ft. ht., 6"-8" dia.

2.B

Wood Bollard

Material:

Wood

Color:

Natural, Pressure-treated

Form/Style:

6" x 6" square wood, cut

top on 30° angle

Application:

Recreational areas, training

areas, family housing areas, vehicular circulation

control

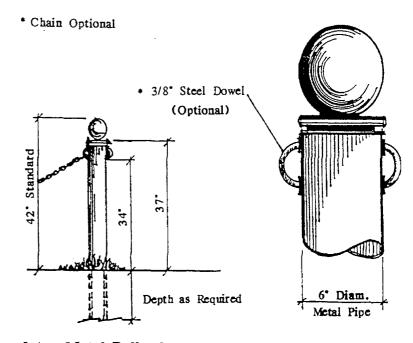
Zones: FH, OS

As

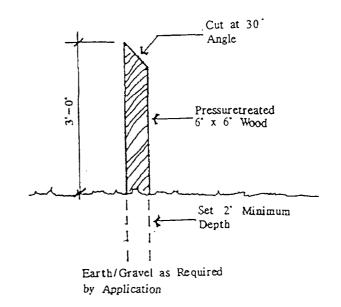
manufactured by or equal

to:

Make and install on Post



2.A Metal Bollard



2.B Wood Bollard

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Furnishing Selection

GW TH TT TP SS OS FA FH CS

(See Site Furnishing Matrix)

2.C

Concrete Filled Pipe

Bollard

Material:

Galvanized steel pipe filled

with concrete with convex

Color:

Black colored finish

Form:

Simple cylinder

Application:

Service areas, protection of

building walls, corners, where required in less

visible areas

As

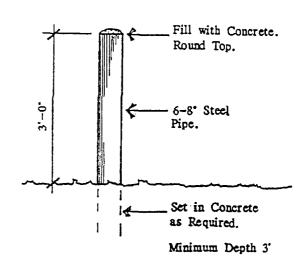
manufactured

by or equal

to:

Make and install on Post--

3 ft. ht., 6" x 8" dia.



Concrete-filled Pipe Bollard 2.C

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Furnishing Selection

GW TH TT TP SS OS FA FH CS

(See Site Furnishing Matrix)

Trash Receptacles

3.A

Metal Receptacle

Material:

Solid steel with interior

fiberglass lid

Color:

Black colored finish

Form:

Round, metal slat with

flared top

Application:

High visibility areas

within public use zones

Zones: GW, OS

As

manufactured by or equal

to:

Victor Stanley

Brick House Road

Dunkirk,

Maryland 20754 301-855-8300

Model No.:

S-42. Ironsites

The Bethesda Series

3.B

Metal Trash Receptacle

Material:

Heavy gauge, hot-dipped

galvanized steel

Color:

Black painted finish

Form:

Tapered, utilitarian design

Application:

General use throughout

post

Zones: GW, CS, TH, TT, TP, FA, SS, FH, OS

As

manufactured by or equal

to:

United Metal

Receptacle Corp. 14th & Laurel Street Pottsville, PA 17901

717-622-7715

Model No.:

SBR-52

32 Inch Ht.,

24 Inch Dia.

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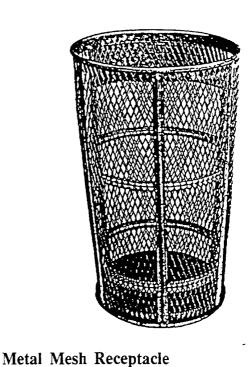
3.B

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3.A Metal Receptacle



Furnishing Selection

GW THOS FH CS (See Site Furnishing Matrix)

Fencing/Railings

4.A

Metal Picket Fence

Material:

Tubular steel

Color:

Black finish

Form/Style:

Traditional Picket

Application:

Areas of high visibility

Zones: GW

As

manufactured by or equal

to:

Westmoreland

Tubular Products Mfg.

Co.

Bristol, PA 215-949-3100

Model No.:

Barrier Traditional

4.B

Wood Fence

Material:

Wood

Color:

White (residential yard

border)

Dark stain (screening of utilities or service areas)

Form:

Traditional Post, Board,

Rail pattern

Application:

Screening or area

definition in Headquarters and Residential areas Zones: GW, CS, TH,

FH, OS

As

manufactured by or equal

to:

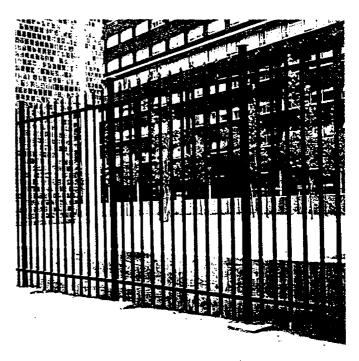
Walpole Woodworkers

767 East Street Walpole, MA 02081 617-668-2800

Model No.:

The 'Universal' Fence

4, 5, 6, or 8 ft. ht.



4.A Steel Picket Fence



4.B Wood Fence

□AR □LA □CE □ME □EE □MT

Furnishing Selection

GW TH TT TP SS OS FA FH CS

(See Site Furnishing Matrix)

Fencing/Railings

4.C

Chain Link Fence

Material:

Galvanized mesh with

vinyl coating

Color:

Black vinyl coat where

feasible in high-visibility areas where chain link is

required.

Form:

Posts and rails as required,

with square terminal post

tops

Application:

High security in areas of

low visibility wherever

needed

As

manufactured

by or equal

to:

Anchor Fence Co. 6500 Eastern Ave.

Baltimore.

Maryland 21224

301-633-6500

Model No.:

As required for application

with PVC vinyl and square

terminal posts

4.D

Sidewalk Railing

Material:

Steel Pipe Rail, 2" dia.,

Color:

Dark Terra Cotta, Pipe

Only

Form:

As illustrated

Application:

Edges of and at

Intersections of Sidewalks (To Prevent Shortcuts across Lawns where High

Pedestrian Traffic Occurs)

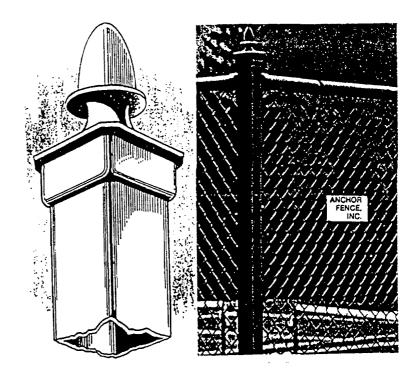
As

manufactured

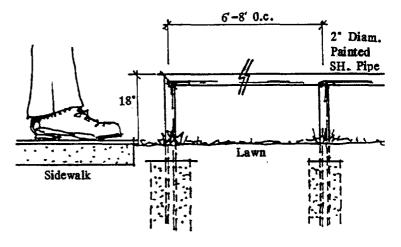
by or equal

to:

Make and install on Post.



4.C Chain Link Fence



4.D Sidewalk Railing

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Furnishing Selection

GW TH TT TP SS OS FA FH CS

(See Site Furnishing Matrix)

Phone Booths

5.A

Kiosk Phone Booth

Material:

Cast Aluminum

Color:

Black finish

Form:

Cylinder

Application:

Use only in high-volume

pedestrian areas. Zones: GW, CC

As

manufactured by or equal

to:

King Products Ltd. 3150 Wharton Way Mississauga, Ont. Canada L4X2C1 416-625-1111

Model No.:

540, Telephone Kiosk

Bus Shelters

6.A

Bus Shelter with Bench

Material:

Aluminum structure with

wood bench

Color:

Aluminum to have black finish, bench to be natural

wood color

Simple rectangular shape

with flat roof

Application:

Throughout post as

required

As

manufactured by or equal

to:

Michigan Industrial Co.

5505 36th Street Grand Rapids, Michigan 49508 616-949-1900

Model No.:

'Manatee Shelter'



5.A Phone Booth



6.A Bus Shelter

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Furnishing Selection

GW TH TT TP SS OS FA FH CS

(See Site Furnishing Matrix)

Flagpole

7.A

Steel Flagpole

Material:

Stainless steel pole

Color:

Clear finish, satin rubbed

finish

Application:

Key ceremonial and

activity areas

As manuf

manufactured by or equal

to:

Acme Flagpole Co.

Lingo, Inc.

Box 1237, 28th St. Camden, NJ 08105 609-964-0487

Model No .:

As required with:

Standard foundation

 Flagclasp with thermoplastic finish

Ball on pole top

Polished finish #4

7.B

Pennant Holder

Material:

Pressure-treated Wood,

4" x 4" posts

Application:

Entrances to Barracks and

other buildings used by

trainees, LT Zone

As

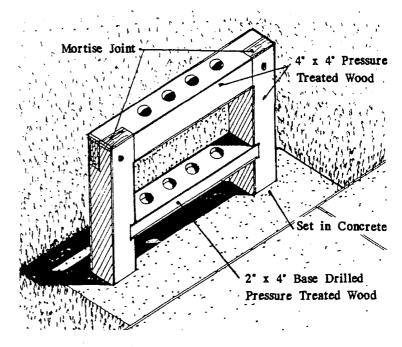
manufactured by or equal

to:

Fabricated on Post.



7.A Flagpole



7.B Pennant Holder

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4. Site Furnishings

Furnishing Selection

GW TH TT OSCS

(See Site Furnishing Matrix)

Drinking Fountains

8.A

Drinking Fountain

Material:

Cast-iron base, steel standard, chrome-plated bronze bowl, bubbler, and

mouthguard

Color:

Black finish

Form:

Circular base and bowl

Application:

General use as required in

pedestrian areas.

Zones: GW, CS, TH, TT,

TP, OS

As

manufactured by or equal

to:

Murdock, Inc. 2488 River Road

Cincinnati, Ohio 45204

513-471-7700

Model No .:

M-40

Economy, Anti-freezing

8.B

Drinking Fountain for Handicapped Use

1 manacap pou

Material:

Cast aluminum

Color:

Black finish

Form:

Pedestal mount

Application:

As required

As

manufactured

by or equal

to:

Murdock, Inc. 2488 River Road

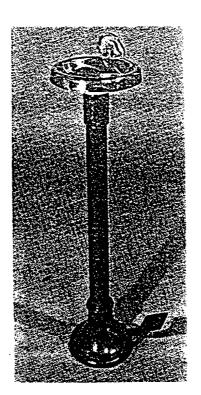
Cincinnati, Ohio 45204

513-471-7700

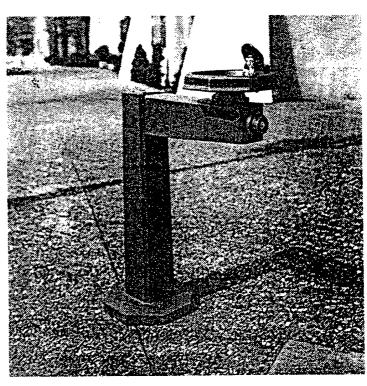
Model No .:

M-43

Pedestal Mount



8.A Drinking Fountain



8.B Handicap Drinking Fountain

□ AR □ LA □ CE □ ME □ EE

Furnishing Selection

GW TH TT TP SS OS FA FH CS

(See Site Furnishing Matrix)

Bike Rack

9.A

Ribbon-shaped Bike Rack

Material:

Welded, seamless pipe

Color:

Black finish

Form:

Sinuous curved rack, embedded below grade

Application:

At building entries out of

main circulation areas

As

manufactured by or equal

to:

Bike Security Racks

Space Lattice Co. P.O. Box 371

Cambridge, MA 02140

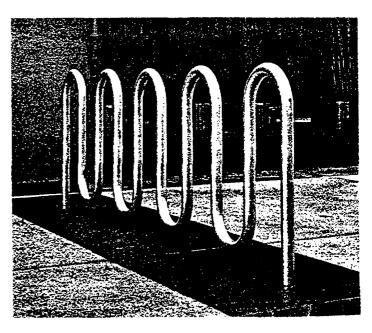
617-547-5755

Model No .:

"Bike Stanchion"

BS-B3

Mounted Below-Grade



9.A Bike Rack

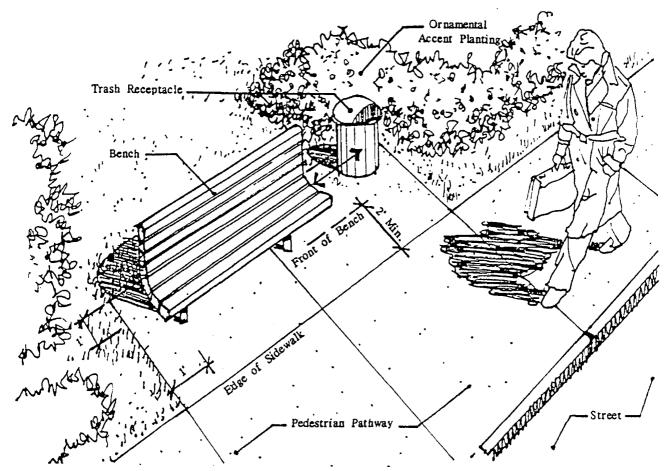
4.2.1

Bench/Sidewalk

GW THOS FH CS

Relationship of Bench and Sidewalk

- The simplest of relationships between site furnishings and site conditions is illustrated here.
- Benches in the appropriate style should be located in areas of active pedestrian use.
- A bench should be incorporated with a trash receptacle in the appropriate style.
- Paving should extend a minimum of
 1' beyond the end and back of bench.
- · Bench should face walkway activity area.



Conceptual Relationship of Bench and Walkway

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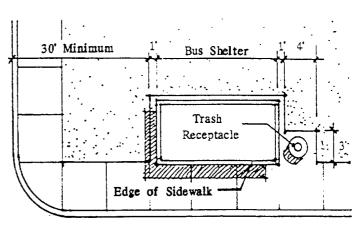
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Bus Shelters

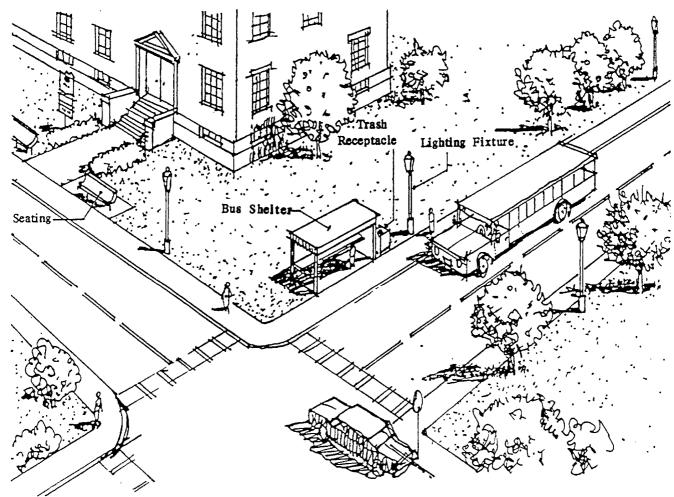
GW TH TT TP SS OS FA FH CS

Location

- Bus shelters should be located in as few locations as possible, only where the heaviest demand exists.
- The shelter should be a minimum of 30' from the corner in order to not obstruct the view of oncoming traffic and not interfere with pedestrian movement on the sidewalk.
- Trash receptacles and lighting fixtures should be located in proximity to bus shelter.



Conceptual Plan of Bus Shelter



Conceptual Relationship of Bus Shelter, Street, and Site Furnishings

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CE

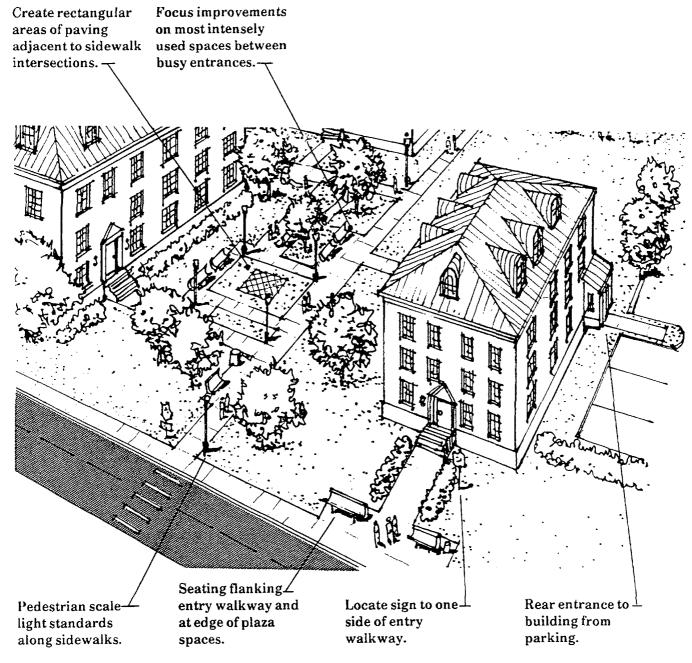
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Relationship of Site Furnishings Buildings/Open Space

GW TH FH CS

Small plaza areas are important where administration buildings are clustered. These are the places people use enroute to different offices. They serve as informal meeting places and unify the complex of buildings.



Conceptual Relationship of Site Furnishings and Building Open Spaces.

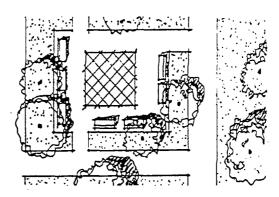
□ AR □ LA □ CE □ ME □ EE □ MT

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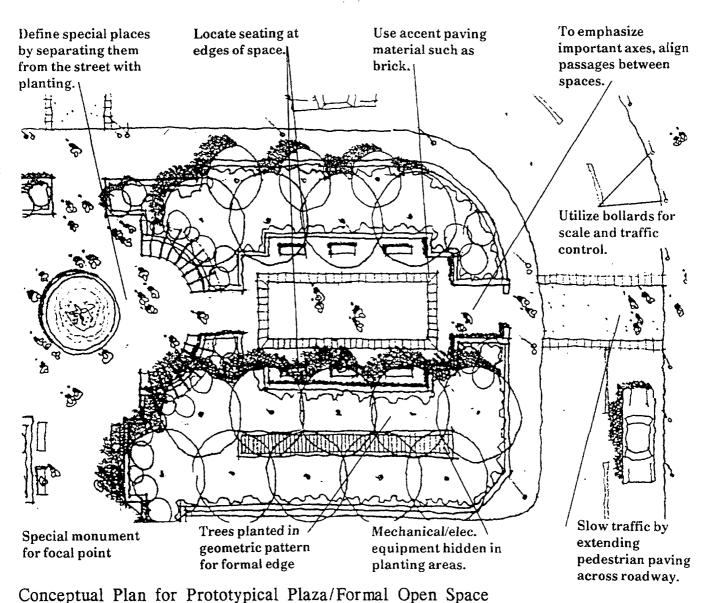
Relationship of Site Furnishings Plaza--Courtyards

GW TH CS

Create a small defined "outdoor room" by forming a rectangular area of paving, using accent materials, such as brick with concrete.



Conceptual Plan for Outdoor Room



□ CE

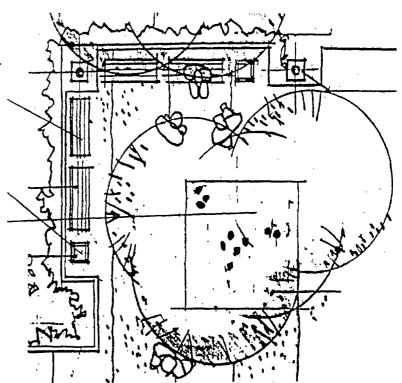
☐ EE

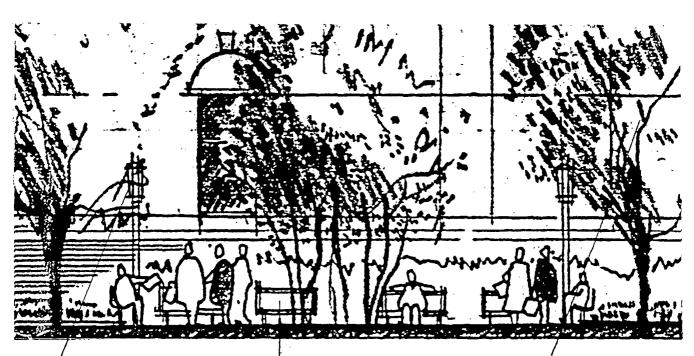
Seating in Plazas/Courtyards

GW TH CS

Relationship of Seating/Site Furnishings

- Seating should be located at perimeter of Plaza spaces oriented toward activity or amenity.
- Lighting and trash receptacles should be in close proximity.
- Planting/trees should provide shade and define pleasant groupings for seating.





Pedestrian scale light fixutures.

Seating placed at perimeter oriented toward activity area. Trees and planting to provide shade and break up paved area.

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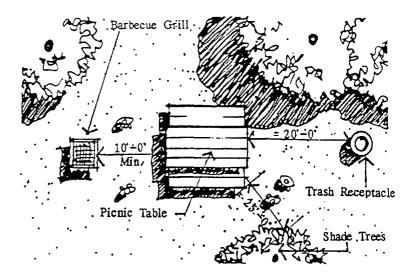
☐ EE

Recreation/Picnic Areas

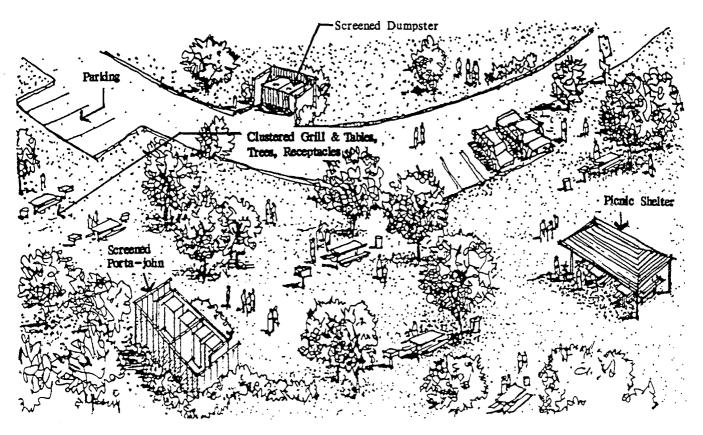
FH OS

Site Furnishing should be grouped together to form clusters of activity in the open space, rather than randomly scattered in the OS and FH Zones.

- Picnic tables should be placed close to trees for shade, but not underneath the tree. Grills and trash receptacles should not be too close.
- The relationship of active recreational uses and facilities must be carefully planned and related to the natural elements in the landscape, especially shade trees.



Relationship of Picnic Furnishings



Conceptual Relationship of Site Furnishings-Recreation Areas

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4.Site Furnishings

Lawn Barrier Rail

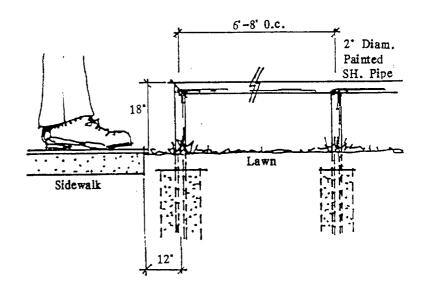
TH TT

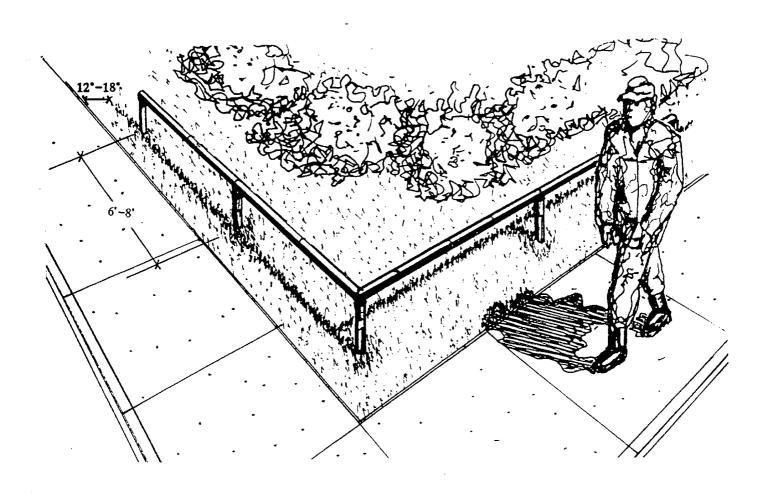
To discourage footpaths across lawn areas, use lengths of a low pipe rail along edge of sidewalk.

- Locate rail 18" high, 12" back from edge of sidewalk.
- Locate vertical supports 6' to 8' apart.

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□ CE

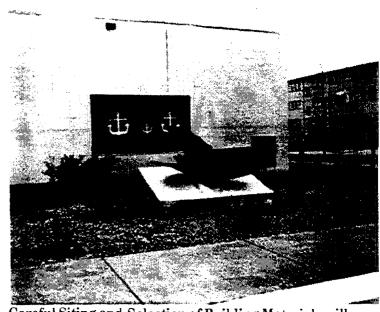
Battalion Monuments

TH TT

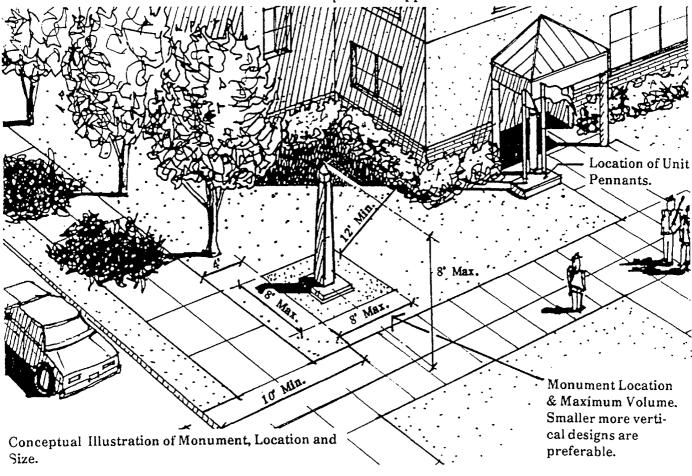
□ MT

☐ EE

Battalion Monuments are constructions that instill pride and identity. The location and size of these constructions should be carefully controlled as illustrated. While the creativity of each battalion should not be stifled, the design energy should be channeled in order to create a structure that is permanent and projects a professional image. Materials that will withstand the elements and facilitate maintenance should be selected.



Careful Siting and Selection of Building Materials will Improve the Appearance.



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Introduction

GW TH TT TP SS OS FA FH

(1 of 3)

This section includes two separate but related elements that have a significant impact on the visual environment (lighting and utilities). Both these elements are most commonly associated with the street system roadway right of way.

Lighting Overview

As is generally the case in the evening the after office-hour syndrome occurs when many of the operations and facilities are closed and personnel have left the premises. Additionally, vehicular traffic is reduced and, what was hours earlier an active, post, now becomes a somewhat vacated environment.

Compounding this situation is the fact that the evening brings darkness and a uniform reduction of post visibility and presence. In recent years, there has also been a policy of reducing the night time exterior light levels to conform to energy conservation directives. In general, at night is is more difficult to orient oneself around the post than in the daytime environment.

In the evening, the lighting concentration would occur in residential areas for both barracks-type housing and family housing. Community facilities in use would be lighted, and important buildings, monuments and gateways would be highlighted. Activity areas would be linked by lighted roadways, with the lighting level reflecting the roadway hierarchy.

The street luminaires, which in daylight receded into the tree and facade backdrop, become visible at night (as points of light) and set the new scale

for the post. The visual quality of the light (which is low pressure sodium) is also negatively affected by the energy concerns. The relatively low light output and very distorted yellow/orange light quality casts a peculiar veil over the post at night. Some of parking lot lighting is mercury vapor, of a contrasting bluish color. Many of the major facilities appear to be poorly illuminated such a major administrative buildings, the main post Flag Staff, the Third Post, and the backs of and central spine of the Workshop and Training Center.

Additional security lighting is needed, especially in storage areas and within the Service/Support, Training Facilities, and Third Port zones. This is particularly important on post with many types of military vehicles and equipment for training and storage.

Lighting Lamp Types

There exist a number of light sources available for exterior lighting. The following is a simple description of each type. This information is general only; for specific application more detailed design will be required:

The exterior lighting system on the post provides visual impressions from both a functional as well as a perceptual point of view. There is a mixture of different lighting types on the post providing varying degress of light levels with an inconsistent location pattern. Because many of the visual zones are inconsistently lighted, areas of concentrated activity at night are often not lighted at the level that would be expected. Nighttime pedestrian and vehicular activities are concentrated in the Troop Housing, Training Facilities,

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Introduction

GW TH TT TP SS OS FA FH CS

(2 of 3)

and Community Services areas. The large size of the post, combined with the scattered heavy activity areas, results in lighted areas widely spaced apart. Zones such as the Third Port and Felker Army Air Field seem separated from the rest of the post are surrounded by heavily wooded areas and open spaces.

Low Pressure Sodium - This light source is very energy-efficient but puts out a very low level of light. The color rendition from the light is yellow/orange and visually reflects plants and people poorly.

High Pressure Sodium - This light source is very efficient, relatively long-lived, with a high lighting level. The color rendition is pink/orange which is not particularly flattering to plants or people. This is recommended for the public highways going through the post on the perimeters.

Mercury Vapor - The mercury vapor lamp is the longest-lived of any of the sources mentioned here. It is not as efficient as the high pressure sodium and produces lower lighting levels. The color of the light produced is bluish/green and not complimentary to people or plants, although it is not as offensive as high pressure sodium light. Color corrected mercury vapor is even less offensive and should be used instead of mercury vapor.

Metal Halide - Metal halide is between mercury vapor and high pressure sodium in both efficiency and longevity. It has good color rendition and is not psychologically offensive to people. Incandescent - This lamp type has the most pleasing color of all light sources. However, low efficiency and short life span limit its use except in special areas where its warm color rendition characteristics are required.

Required illumination levels are determined by the amount of nighttime activity that will take place in a given areas. Primary streets will be bright lit than secondary streets.

Housing areas should be lit at the lowest level allowed for safety. Standards for foot-candle levels should be followed for the different use areas with allowances for special conditions and will require specific engineering/design studies.

Lighting Recommendations

Our recommendations at this point in time are broad brush in nature and discuss solutions in generic sense. In an effort to comprehend these recommendations, it is important to understand a basic physical requirements which is: <u>light to see by</u> <u>as distinguished from light you see.</u> This physical requirement calls for sufficient light without distraction and with appropriate direction and diffusion. It is a simple requirement, but within its general framework, the precise amount and placement of light (not fixtures) will very widely according to the demands.

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Introduction

GW TH TT TP SS OS FA FH CS

(3 of 3)

Light Source/Lamp Type Recommendations

- A single light source type should be used throughout an entire visual zone preferably throughout the entire street and roadway system.
- Color-corrected Mercury Vapor or Metal Halide is recommended for the entire post but especially the higher visibility areas of the Gateway, Community Services, Troop Housing, and Troop Training areas.
- Incandescent light should be utilized in the Family Housing Zone associated with a surface-mounted house light program.

Lighting Application

- Appropriate fixture types are described in detail in the following pages of this section.
- In general terms more emphasis should be placed on illuminating building facades, especially the more symbolic and significant architectural structures and portions of the Gateway and Community Center areas. This will have both a symbolic visual improvement effect, as well as an improved security impact.
- Lighting should be reflected off building facades rather than light sources being mounted on and shining away from building facades. Reflected light has a much more beneficial impact and should be carefully placed to minimize offensive glare.

Utility Systems Overview

The utility systems are the infrastructure that carry and distribute power, water, gas, steam, wastes and communications throughout the post. While these systems are essential to the operations of the post, their functional requirements must not dominate the streetscape.

Utility Recommendations

- As a general rule, utility systems should be combined and placed underground. This is especially true in high visibility areas.

Where underground placement is not possible and where distribution systems necessitate above-ground placement; careful coordination must be carried out to assure that unsightly utilitarian equipment is located and screened from view. The pages that follow in this section will address these techniques in more detail.

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5.Lighting & Utilities

Light Matrix

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GW TH TT TP SS OS FA FH CS

Selection of Fixtures

The following matrix is a summary of the light fixtures to be used on post within the appropriate visual zones. Refer to pages DC 5.2, 5.3 and 5.4 for specific fixture types, and to DC 5.5.1-5.5.2 for specific recommendations on location and application. The three columns below contain the following information: Light Fixture (General Description), Application, and appropriate Visual Zone. Though there may be exceptions to Application and Visual Zone, the matrix may be used as a general guide followed by more detailed information on installation and location.

Light Fixture		Application	Visual Zone										
			GW	TH	TT	TP	SS	OS	FA	FH	CS		
1.	Square Cutoff Luminaire	A. RoadwaysB. Walkways	•	•	• •	•	•	•	•	•	•		
	Single Luminaire	C. Parking Lot Perimeter D. Service Areas	•	•	•	•	•	•	•	•	•		
	Double Luminaire	Parking Lot Islands	•	•	•	•	•	•	•	•	•		
2.	Light Bollard- Aluminum	Plazas & Courtyards		•		•					•		
3.	Flood Lights	A. Recreational Fields		•				•			•		
		B. Security Lighting		•	•	•	•		•		•		
4.	Accent Lighting	A. Ceremonial Areas, Monuments	•	•	•		•		•		•		
		B. Architectural Highlighting	•	•	•	•	•		•		•		

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Light Fixtures

GW TH TT TP SS OS FA FH CS

(See Lighting Matrix)

1. Fixture

Description

Square, cut-off fixture

Material:

Cast aluminum pole and housing

Color:

Black finish on all parts

Application:

Roadways - single

mount

Parking Lots -

single mount on periphery;

double

mount within parking lots in curbed islands as required.

Walkways - single

mount

(See Application Section for height range of fixtures)

As manufactured

by or equal to:

Kim Lighting by Kidde 16555 E. Gale Ave. P.O. Box 1275 Industry

California 91749 818-330-3861

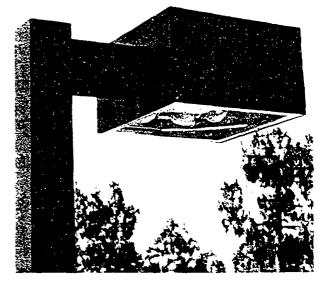
Model No.:

Series - CCL 329, 325,

320 or 529, 525, 520; PBCI, or

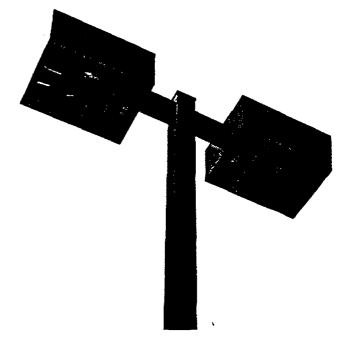
PCCL Poles with optional Lexan

Shield



Single-mount

Cut-off Fixture



Double-mount

Cut-off Fixture

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Light Fixtures

GW TH TT TP SS OS FA FH CS

2. Fixture:

Contemporary

Cylindrical

Description:

Light Bollard

Material:

Cast Aluminum

Color:

Black Finish clear

Polycarbonate diffuser

Application:

Pedestrian areas

As manufactured

by or equal to:

Sterner Lighting

Systems, Inc.

Winstead, Minnesota

55395

612-485-2141

Model No.

Annapolis Round

ART-12" Dia. Bollard

Ht. - 36"

3. Fixture

Description:

Floodlights

Applications:

As required for

recreational field,

high security areas

As manufactured by or equal to: (Suggested manufacturers)

GTF Sylvania

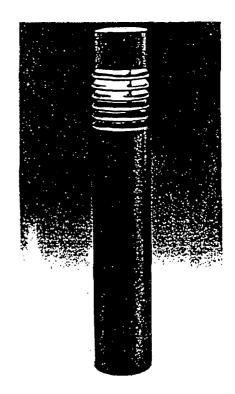
Lithonia Lighting

North American

Phillips Prescolite

Progress Lighting

Sentry Electric



2. Light Bollard

Light fixtures should be selected on basis of functional requirements in areas of low visibility.

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Light Fixtures

GW TH TT TP SS OS FA FH CS

4. Fixture

Description:

Accent Lights

Application:

Ceremonial areas,

monuments, any site of building feature requiring highlighting

As manufactured

by or equal to:

Kim Lighting by Kidde 16555 E. Gale Ave. P.O. Box 1275 Industry

California 91749 818-330-3861

Light fixtures should be selected to provide accent lighting for significant structures and monuments. Fixtures should be screened from view as much as possible.

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Locating Electric & Telephone Lines

Unsightly overhead utilities in high-visibility areas are to be relocated underground wherever possible. This program should be implemented as new development projects provide opportunities for relocation of electric and telephone lines.

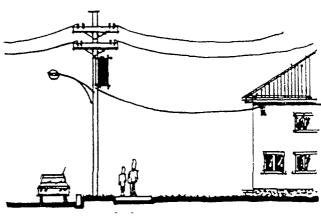
Recommendation A: Underground Lines.

- Lines are to be buried in grass strip along curb, minimizing conflicts with paving, lighting and street trees.
- Service to individual buildings underground; meters (when req.d) on side or rear walls.
- Transformers to be ground- mounted in low-visibility locations.

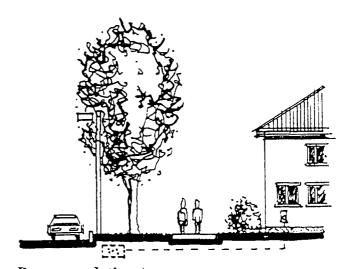
Recommendation B: Setback behind street trees, or to rear of buildings.

- Setback utility poles 20' to 30' from roadway and screen with row of street trees (40' o.c.).

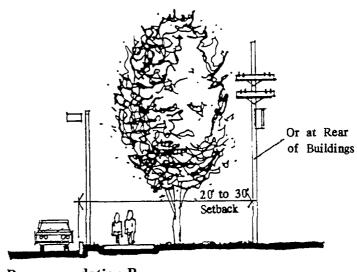
GW TH TT TP SS OS FA FH CS



Not Recommended



Recommendation A



Recommendation B

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Roadway Lighting

Roadway Lighting

Pole adjacent to walkway

- Place pole minimum of 2' from edge of walkway.

Pole adjacent to curb street

- Place pole a minimum of 3' from back of curb.
- Spacing of poles will be determined by light source and layout pattern; follow manufacturer's specifications.

Pole Height & Spacing Guidelines

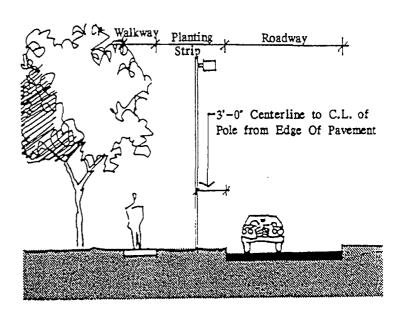
- Varying assumptions of light source and placement will affect pole placement and height. Assume here one side of road only, 1.0 footcandles, single mount and high pressure sodium light source.

Primary Road or Highway (Road width ±50')
Pole Height: 30'-40'
Pole Spacing: 130' o.c.
(250 Watt light source)

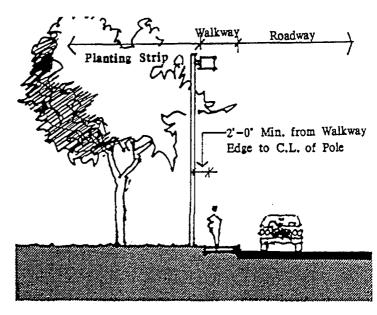
Secondary Road (Road width ±40')
Pole Height: 25'-30'
Pole Spacing: 115' o.c.
(200 Watt light source)

Tertiary Road (Road width ±35')
Pole Height: 15'-20'
Pole Spacing: 100' o.c.
(100 Watt light source)

GW TH TT TP SS OS FA FH CS



Light Pole Adjacent to Walkway



Light Pole Adjacent to Street

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Parking & Pedestrian Lighting

GW TH TT TP SS OS FA FH CS

Parking Lot Lighting

Place a light pole at perimeter of lot, a minimum of 3' from edge of curb. Fixtures at perimeter should be single-mounted.

Place double-mounted fixtures on interior planting islands between parking bays. Pole should be a minimum of 3' from edge of curb.

Where no planting island exists, light pole should be placed on 3' high round concrete pier or protected with pipe ballards.

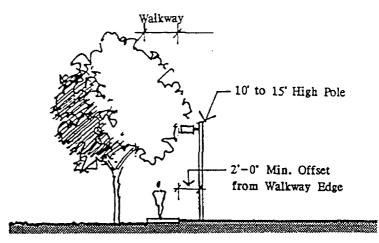
Spacing of poles will be determined by light source and layout pattern; follow manufacturer's specifications.

Pole Height & Spacing Guidelines - Parking Areas

Varying assumptions on light source and placement will affect pole placement and height. Assume here double-mounted fixture, high pressure sodium, and 2 footcandles.

Parking Lot

Pole Height: 25'-30' Pole Spacing: 100'-150' o.c.

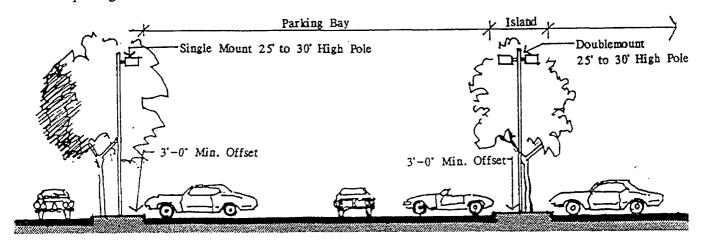


Typical Pedestrian Lighting

Pole Height & Spacing Guidelines - Pedestrian Areas

 Varying assumptions on light source and placement will affect pole placement and height. Follow manufacturer's specifications.
 Assume here a high pressure sodium light source, single-mounted fixture and 2-5 footcandles.

> Pedestrian Areas Pole Height: 10'-15' Pole Spacing: 50'-55' o.c.



Typical Parking Lot Lighting

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Steam Pipes

Steam pipes exist above ground throughout the post and appear as highly visible utilities particularly around the 600/100 block barracks (Sheppard Place), the hospital, Bunker Training Area, UOQ Barracks (around the Officers Club), the 2700 block motor pool, as well as in other visible areas. The pipes extend up at higher elevations, framing roadways, aisles in parking areas, and walkways. They are supported on concrete pedestals that are often painted yellow, particularly outside curbed islands in parking lots. Their visibility along Washington Boulevard needs to be addressed; because of the shiny aluminum color, they appear as prominent items in the landscape. While they have a sculptural configuration, their function does not merit emphasis in the landscape.

New steam pipes should be buried in highly prominent locations and at roadway and pedestrian crossings. If burial is not feasible, it is recommended that new above-ground steam pipes be located to the rear of buildings whenever possible, particularly along Washington Boulevard. Clustered planting will help to de-emphasize their presence, with plant locations providing allowance for maintenance accessibility.

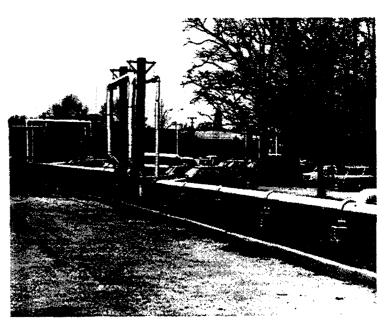
Paint application to highly visible pipes is recommended along Washington Boulevard and where they are existing to the front of prominent buildings. Yellow painted concrete pedestals should be painted a red/brown color; unpainted pedestals should remain as is.

GW TH TT TP SS OS FA FH CS

All pipes in parking areas should be located within curbed islands for protection from vehicles and circulation safely. Burial at roadway aisles is recommended.



Bury or relocate steam pipes to the rear of the buildings.



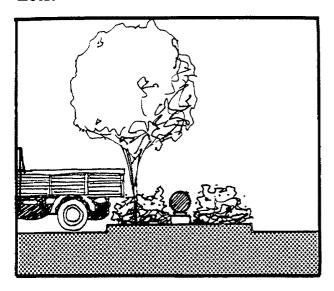
Bury piping if possible in areas of vehicular circulation.

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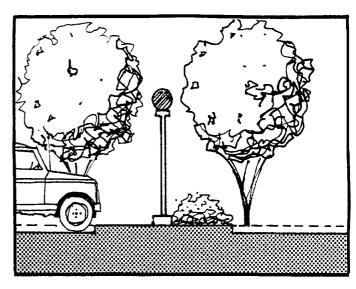
Steam Lines through Parking Lots.

GW TH TT TP SS OS FA FH CS

(Page 1 of 2)

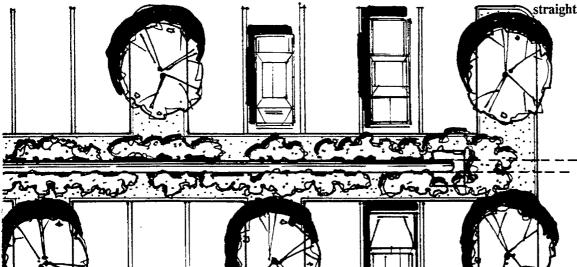


Trees and low shrubs screen the pipe when low.



Trees spaced at 40-70 ft. intervals partially screen the elevated sections of pipe.

In Plantings use an informal arrangement and rhythm, rather than a straight regular line.



Provide a planter aisle 10-15' wide for the pipe.

Trees to be planted at intervals of 40-70 ft.

Shrubs and ornamentals to be planted along pipe.

Run pipe below ground where circulation through parking requires a driveway.

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Steam Lines at Streets

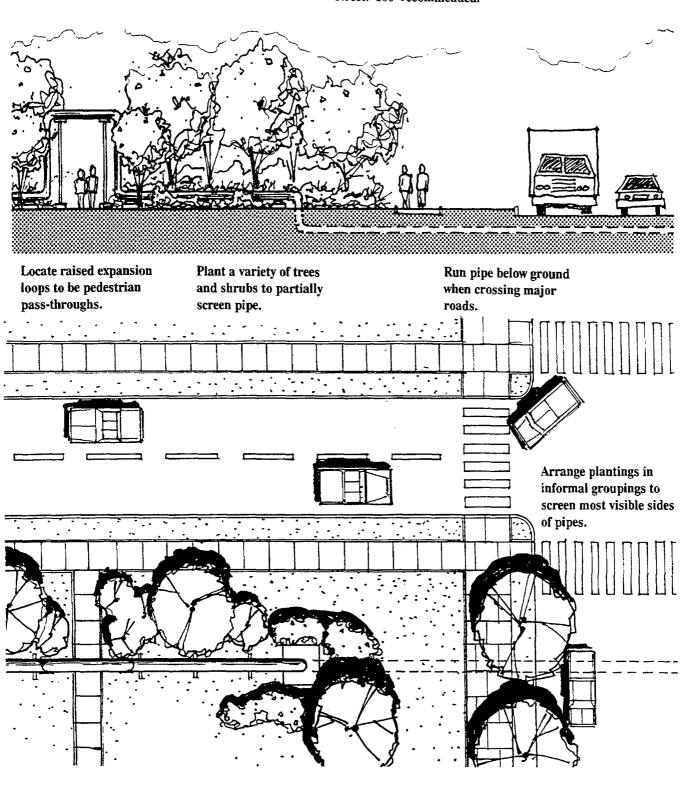
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GW TH TT TP SS OS FA FH CS

(Page 2 of 2)

Min. 50' setback from street. 100' recommended.



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Utilities Matrix

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GW TH TT TP SS OS FA FH CS

(1 of 2)

This matrix is a brief summary of the existing and proposed utilities on post, and how they are to be screened or relocated within each visual zone.

	Utility Type			Vi	sua	1 2	Cone	3		Action to be Taken		
		GW	TH	TT	TP	ss	os	FA	FH	CS		
1.	Existing Overhead Utilities	•	•	•	•	•		•	•	•	A. Wherever possible place utility lines underground	
				•	•	•		•			B. Where underground placement is not possible, relocate to the rear of buildings and in service areas.	
2.	New Utilities	•	•	•	•	•	•	•	•	•	A. Locate underground wherever feasible.	
3.	Existing/New Transformers rear service Substation	•	•	•	•	•	•	•	•	•	 A. Near buildings locate to the rear and and/or areas; screen with walls, fences, berms, or planting. Size of unit to be as small as possible. B. Along roadways screen from view with berms, plantings, and fencing. Use existing vegetation for screen- ing as much as possible. 	

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5.Lighting & Utilities

GW TH TT TP SS OS FA FH CS

(2 of 2)

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	Utility Type			Vi	isua	l Z	con	9				Action to be Taken
		GW	TH	TT	TP	SS	os	FA	FH	cs		
	HVAC Units	•	•	•	•	•	•	•	•	•	A.	Locate within service areas or to rear of buildings. Screen.
										•	B.	In areas of extremely high visibility every effort should be made to place units on top of building screened from view by a parapet or screen wall.
		•	•	•	•	•	•	•	•	•	C.	Window AC units should be eliminated in all zones.
5.	Storm Inlets	•	•	•	•	•	•	•	•	•	Α.	Install bike-proof grates
ó.	Existing Drainage Ditches		•							•	A.	Eliminate where possible by underground piping to met drainage requirements.
				•	•	•	•	•	•		В.	Use grass swales with lawn inlets where drainage requirements are not great.
7.	Steam Pipes	•	•							•	A.	Bury piping underground in highly visible areas wherever possible.
		•	•	•	•		•	•	•	•	В.	Bury piping underground at roadway intersections, parking aisles, and major pedestrian paths
			•	•	•	•	•	•	•	•	C.	Locate above ground piping to the rear of facilities within curbed island in parking lots.
	·		•	•	•	•	•	•	•	•	D.	Cluster plantings along piping to de-emphasize their visibility; paint a designated color in highly visible areas.

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General Notes

GW TH TT TP SS OS FA FH CS

(Page 1 of 2)

Current Policy

Presently, several different sign types are used with varying degrees of success. A standard "colonial" shaped signboard has been used for many signs and has been effective in projecting a distinctive institutional image for the post. However, the single size of that format has been somewhat limiting when numerous messages must be presented. This has, in some areas, required several signs to be installed close together, causing the appearance of clutter and redundancy.

Information arrangement on each signboard is frequently illegible or unintelligible. This occurs when too much information is presented, too many unnecessary words or titles are shown, and the titles are presented without a meaningful arrangement to distinguish between different entities being identified. Often, all upper case letters are used and are difficult to read. Typeface styles are mixed and used inconsistently.

The Design Criteria

The goal of these design criteria is the establishment of a hierarchy of information and sign type which presents information clearly, projects a unified image, and is flexible and adaptable to accomodate a wide range of message requirements. The pages that follow describe a coordinated "menu" of signboard types and sizes, which will allow for the "colonial" shape used for specific identification purposes, while rectangular shapes will be used for all directional and directory information.

Signage throughout the installation must be skillfully managed and coordinated according to an overall Signage Master Plan, prepared and maintained by the DEH. (See TM5-807-10 "Signage" for further guidance on developing this master plan.)



Two "colonial" signs placed side by side appear redundant and demonstrate an inadequacy in the signage system.

Even with the most extensive design controls, however, any signage policy must be skillfully adapted to each situation. Although the appearance of consistency and standardization is important, this effect can only be achieved by carefully adapting signage design criteria to particular circumstances. Rigidly applied controls frequently result in specific solutions that are uniform, but appear to be inappropriate.

Most importantly, the information itself must be carefully condensed and organized on the signs in an efficient hierarchical fashion. The spatial arrangement of the information on each sign is itself part of the message, and is as important as the specific wording.

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General Notes

GW TH TT TP SS OS FA FH CS (Page 2 of 2)

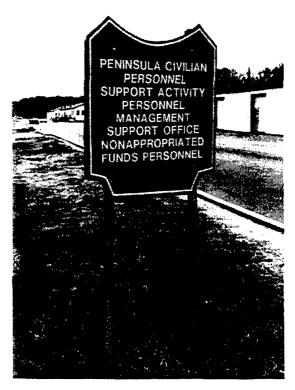
Army-Wide Sign Policy

TM5-807-10 "Signage" must continue to serve as the primary source for guidance on message content, typography, and organized arrangement of the information on the signboard. The design criteria included here provide guidance on the size and shape of the signboard, materials, and fabrication of the supports, and special considerations related to the "colonial" sign shape.

Summary of Recommendations

The following sign policy improvements have been incorporated into these design criteria:

- The specific shape of the "colonial" signboard is refined to a recognizable pediment profile.
- Typeface styles and letter sizes are specified for consistency.
- Arrangement of information on signs is prescribed according to message function.
- Upper and lower case letters are to be used for all situations. This makes messages more easily legible than when all upper case is used.
- The design of the monumental masonry sign is refined. This should be applied to all future monumental signs.
- The support posts for all other signs are to be 4 x 4 treated wood rather than the metal perforated posts currently in use. This is to give each sign the appearance of permanence and substance representative of the importance of the installation.



Too many words result in an unintelligable sign.

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6.Signs

Sign Types and Dimensions

GW TH TT TP SS OS FA FH CS (Page 1 of 3)

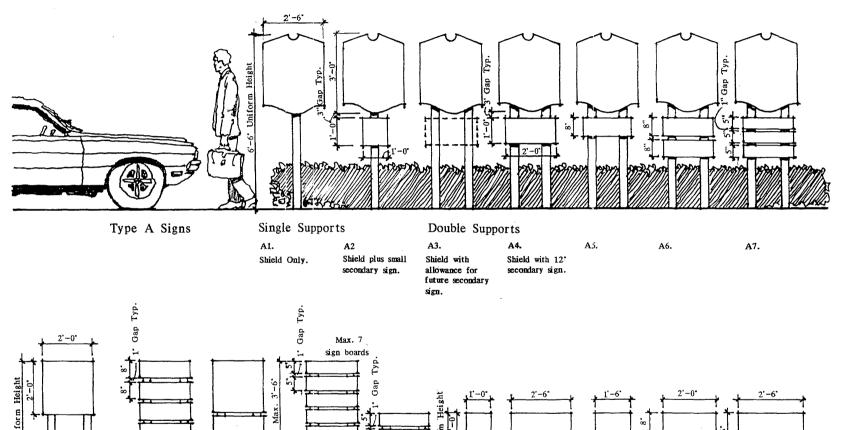
Recommendations for selecting sign types and panel sizes:

The illustrations demonstrate most choices and combinations necessary to accommodate any message requirement. Wherever possible, limit choices to those included on these pages so that signage throughout the post will be coordinated.

Certain sign sizes and shapes must be visually associated with specific categories of information. Message types must, therefore, be restricted to a limited set of sign size/shape options. Refer to the chart on page 6.1 for permitted sign type choices for your message type.

Type A signs are to be to be used primarily for identification signs at the location of the facility identified. No directional arrows are permitted on these signs. Secondary signboards may be used beneath the "colonial" board to carry directional and directory type information. Type A signs are to be used sparingly. Do not locate within 100 ft. of one another.

Type B are to be used in lieu of a type A sign whenever the smaller format can adequately satisfy the message requirement. Use type B8 for identification of minor facilities to avoid overuse of the type A signs. Type B signs are to be generally associated with directional, directory, informational, mandatory and motivational messages.



Type B Signs

Single large panel.

Series of

panels for

changeable messages.

В3. medium size

Combination.

B1. Directory or directional series. 4 to 7 panels.

B5. Directory or Directonal 3 panels.

B7. Small single Medium square panel. size panel.

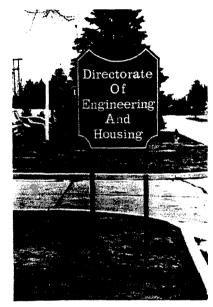
Medi um size panel. B9. Medium size panel. B10. Large single panel.

Sign Types and Dimensions

Type C (monumental signs) are to be used for major identification signs or for post identification signs at the major roadway(s) entering the installation. Sign type C2 should be limited to post identification use. It is recommended for the proposed new post entrance road or for replacement of the existing post identification sign, should that become necessary.

Type C2 may be used for identifying important buildings or complexes, such as "Third Port," "Bunker Training Area," "Felker Army Airfield," etc.

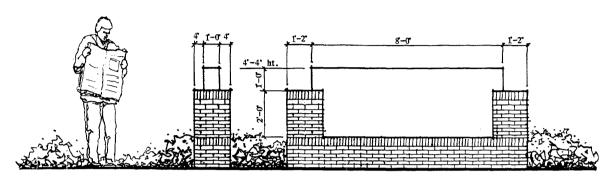
Type C signs are to used *sparingly*. They are very special signs which must command attention. Do not place two type C signs within 500 ft. (min.) of each other.



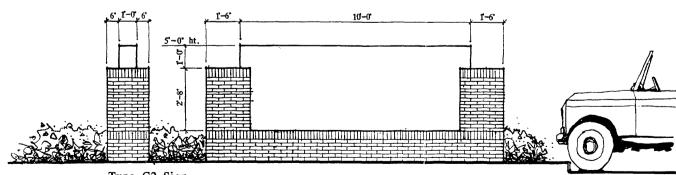
A good example.

GW TH TT TP SS OS FA FH CS

(Page 2 of 3)



Type C1 Sign For identification of major buildings or complexes.



Type C2 Sign

For post identification at major entrance(s) to the Installation.

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Mounting Heights

height information.

Sign heights must be consistent. Use a uniform 6'6" ht. and dimension to top of signboard for all type A signs. Use 5'0" or 3'0" ht. for types B1 through B10. Refer to preceeding pages for complete mounting

In general, the size and height should be minimized, wherever possible, to reduce visual clutter.

Choose a sign sized as small as possible which will adequately do the job. Choose the 3'0" mounting height for type B signs whenever this will satisfy the message requirements.

Important!

Organize the information on the sign to be brief, clear, and concise.

Note:

Identification signs are those that state the name of the building or facility at that location. Directional signs point the way to a destination with an arrow. Directory signs are those that list a series of destinations within a building or in an area of the post, and may serve as secondary information to an identification sign. Informational signs convey other general messages such as schedules, policies or regulations. Mandatory signs carry imperative regulatory messages such as warnings and restrictions. Motivational signs are those that carry inspirational slogans to support training and morale.

GW TH TT TP SS OS FA FH CS (Page 3 of 3)

	Type of Message Required						
Message Permitted Message Permitted On Secondary Sign Board Only	Identification Directional Directory Informational Mandatory/Prohibitory Motivational						
Type of Sign (D.C.6.1): A1 Shields A2 A3 A4 A5 A6							
B1 Rectangular B2 B3 B4 B5 B6 B7 B8 B9 B10							
C1 Monumental C2							

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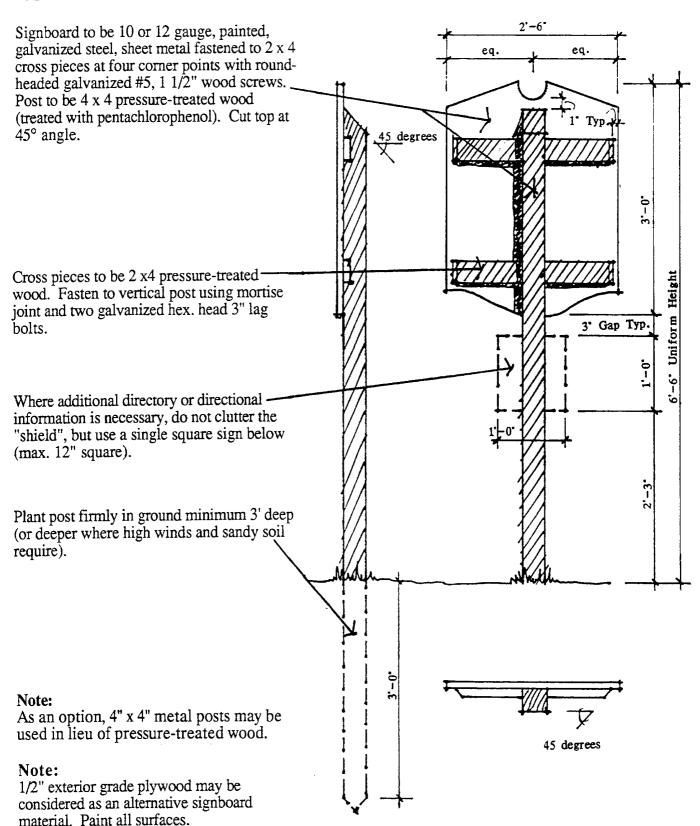
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Materials and Fabrication Type A; Single Support

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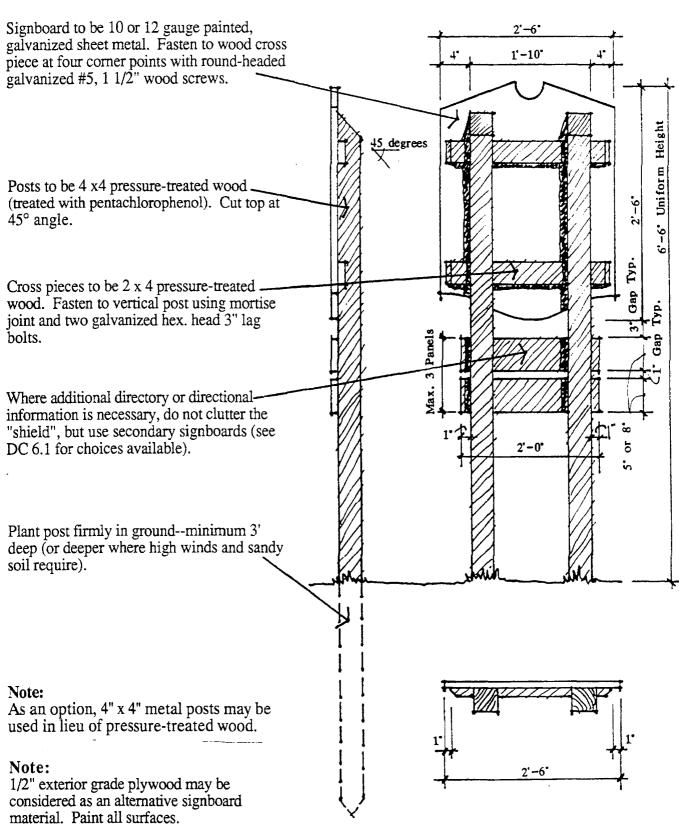
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Materials and Fabrication Type A; Double Support

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-0' or 5'-0' Uniform Height

Materials and Fabrication Type B

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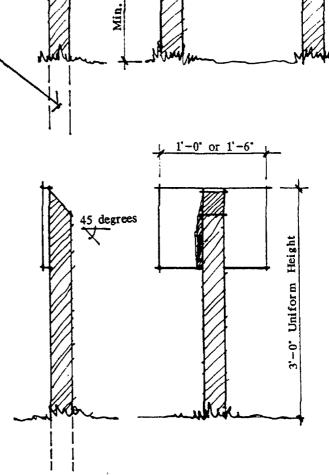
2'-0' or 2'-6'

Signboard to be 10 or 12 gauge painted, galvanized sheet metal. Fasten to vertical posts using two round-headed galvanized #5, 1 1/2" wood screws at each end of sign.

Posts to be 4 x 4 pressure-treated wood (treated with pentachlorophenol). Cut top at 45° angle. Posts must be absolutely straight, plumb and aligned with each other.

Use up to three individual 5" signboards for directory/directional messages on 3'0" standard height. Where required use up to seven individual 5" signboards on 5'0" standard height. See DC 6.1 for other combinations and choices.

Plant post firmly in ground, minimum 3' deep (or deeper where high winds and sandy soil require).



45 degrees

Note:

As an option, 4" x 4" metal posts may be used in lieu of pressure-treated wood.

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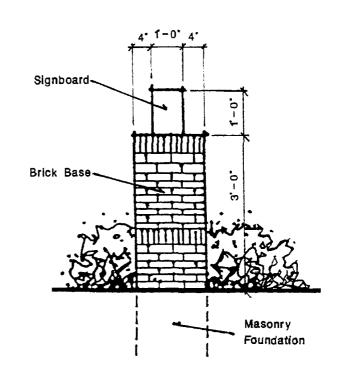
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Materials and Fabrication Type C; Monumental

Signboard to be aluminum sheet metal (0.125), built as a box with internal framing/bracing as required for strength. Top, sides, and edges are to be weatherproof with weep holes provided at the bottom for release of condensation moisture. Finish to baked enamel type paint (See DC 6.4.2).

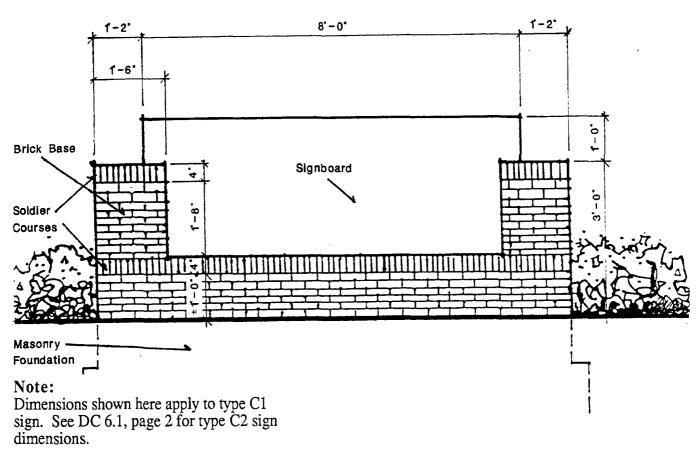
Raised Lettering to be pinned onto aluminum or baked acrylic signboard and to be of cast or sheet aluminum (0.25" min.). Face of letter is to stand uniformly 1" in front of face of signboard. 1" deep cast letters are recommended. All pin connectors, spacers, etc. are to be of aluminum to avoid galvanic corrosion.

Base to be built securely on a masonry/reinforced concrete foundation as required for local soil conditions. Face brick to be of standard brick dimensions (no jumbo brick or concrete block to be used).



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Typography Typeface Style

Three typefaces are to be used on the Post signs: helvetica medium, helvetica regular, and claredon. Where and when each of these typeface styles is permitted to be used depends upon the message function and the type of signboard used.

Traffic control signs are exempted (they should follow Standard Alphabets for Highway Signs and Pavement Mark lines, published by Federal Highway Administration).

Helvetica medium is to be used on all type B signs. Use upper and lower case letters.

Helvetica regular may be used in special cases on type B signs when primary and secondary information must be distinguished to clarify the message. In this case, use helvetica medium for primary information and helvetica regular for secondary information

GW TH TT TP SS OS FA FH CS
(Page 1 of 2)

ABCDEFGHIJKLM NOPQRSTUVWXYZ abcdefghijklmno pqrstuvwxyz 1234567890 &\$-.,'()/←

Helvetica Medium

ABCDEFGHIJKLM
NOPQRSTUVWXYZ
abcdefghijklmno
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Helvetica Regular

Additional Reference

Refer also to TM5-807-10 "Signage" for additional guidance.

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6.Signs

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GW TH TT TP SS OS FA FH CS
(Page 2 of 2)

Claredon is to be used for major information on all type A and C signs such as the primary name of a building, or general name of an area such as "Command Center". Only claredon is permitted on type C (monumental) signs. Use claredon for all messages on type C signs. Use upper and lower case letters.

ABCDEFGHIJKL MNOPQRSTUV WXYZ&abcdefgh ijklmnopqrstuvw xyzfifl12345678 90\$.,"-:;!?""

Clarendon

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Colors

Types A and B Signs

GW TH TT TP SS OS FA FH CS

Paint both front and back face of signboard in dark brown (match Sherwin-Williams Ex BM2-8).

Paint 3/8" wide border in reflective white.

Unit insignia in standard colors of emblem. Outline in white to distinguish from dark brown background.

Lettering to be reflective white adhesive—backed vinyl die-cut type, reflective to auto headlights at night. (See p. 2-2, TM5-807-10 for additional guidance.)

Supports to be unfinished pressure-treated wood, stained with a dark brown opaque wood preservative, if desired.

Secondary sign colors to match primary signs.

Public Affairs

TRADOC

Provost Marshall

Administration Control Center

642

COL. W.B. Marshalton Dir. Public Affairs

LTC. P. J. Batchelor
Provost Marshall

Note (regulatory signs):

Red band on regulatory signs are to match PMS#032C or, if painted, match Sherwin-Williams BM1-7. Exclaimer word on red band to be white letters reflective at night.

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Colors Type C; Monumental

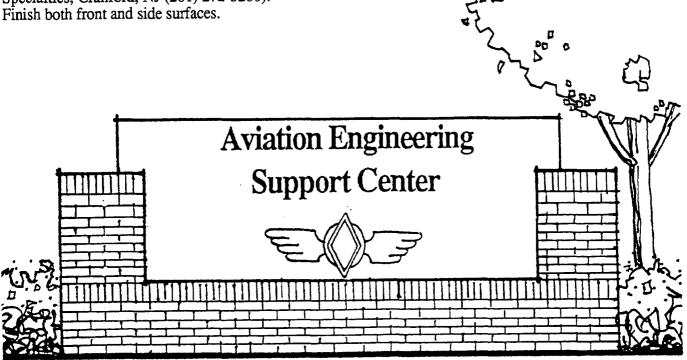
GW TH TT TP SS OS FA FH CS

Brick to match color of the post Headquarters Building. Standard brick unit dimensions (not jumbo brick) to be used.

Mortar to be tinted slightly to a reddish tan color (match Medusa Stoneset-Natural Sand).

Signboard to be finished in a warm medium grey color with a matt/dull finish to avoid reflective glare (match CS/Kynar No. 48, New Light Bronze, as manufactured by Construction Specialties, Cranford, NJ (201) 272-5200).

Raised metal lettering to be finished in a reflective metalic fleck light bronze color (match Duranodic/Cs/Kynar No. 313, Dark Bronze, as manufactured by Construction Specialties, Cranford, NJ (201) 272-5200). Finish both front and side surfaces



See DC 6.3 for specific typeface requirements. (Claredon)

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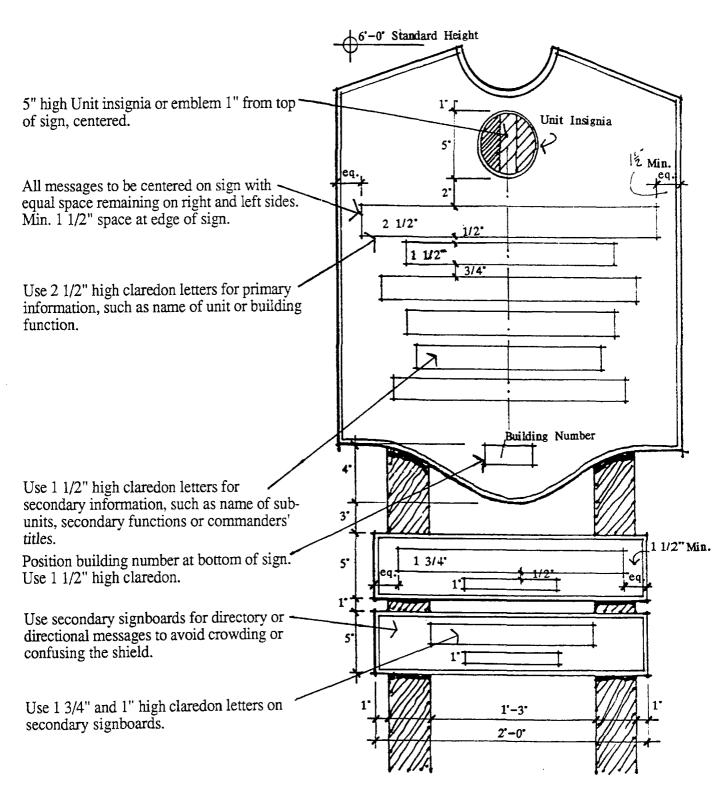
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Sign Layout Type A; Shield

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See DC 6.4 for sample message layout.

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sign Layout Type B; Directional/Directory

GW TH TT TP SS OS FA FH CS

5'-0' Standard Height (4 to 7 Boards)

Use helvetica medium, upper and lower case letters for all destinations.

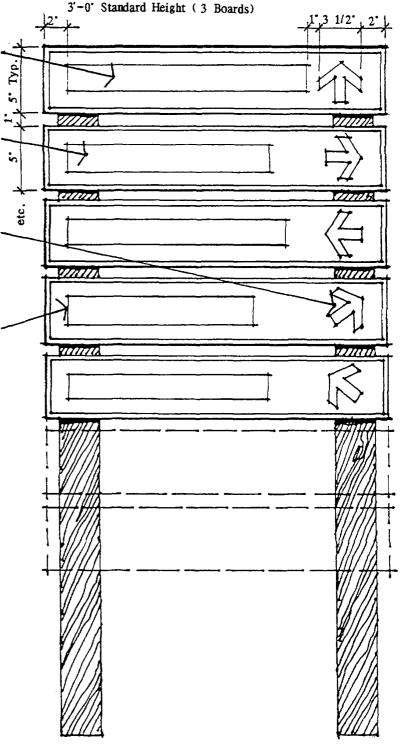
Identify, in brief terms, the destination. Use 2 1/2" high upper and lower case letters, maximum 1'4" long in total (approximately twenty characters).

Use 4" high/wide arrows, positioned consistently at right side of sign. (See page 2-5, TM5-807-10 "Signage" for exact shape of arrow.)

Lettering on each sign is to be positioned "flush left," beginning consistently 2" from left edge of sign.

Important Note:

Keep messages brief. Directional messages must be read and understood quickly.



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Sign Layout Type B; Regulatory/Informational

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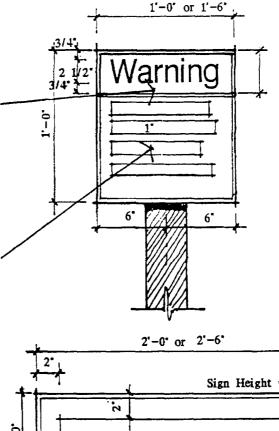
Mandatory information, regulations, prohibitions and warning messages must be distinguished from other sign types by use of separate signboards with an accent stripe.

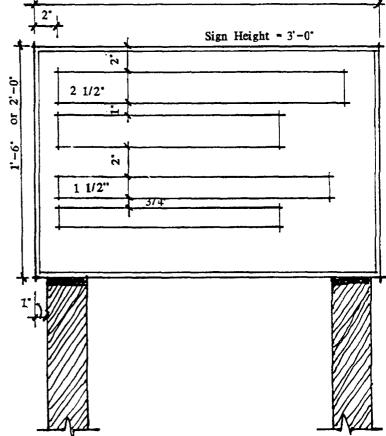
Use a red 4" high horizontal band at the top of the sign (see DC 6.4 for color spec.).

Use an exclaimer word, such as "Attention," "Caution" or "Warning" in 2 1/2" high white reflective helvetica medium letters centered on the red band (see DC 6.4).

Position the message below the stripe in 1" high letters, flush left 1 1/2" from edge of sign.

General information on medium-sized signboards to be presented in 1" to 2 1/2" high letters beginning flush left 2" from edge of sign. Primary information in 2 1/2" letters, secondary information in 1" or 1 1/2" letters. Use only two different letter sizes per sign.





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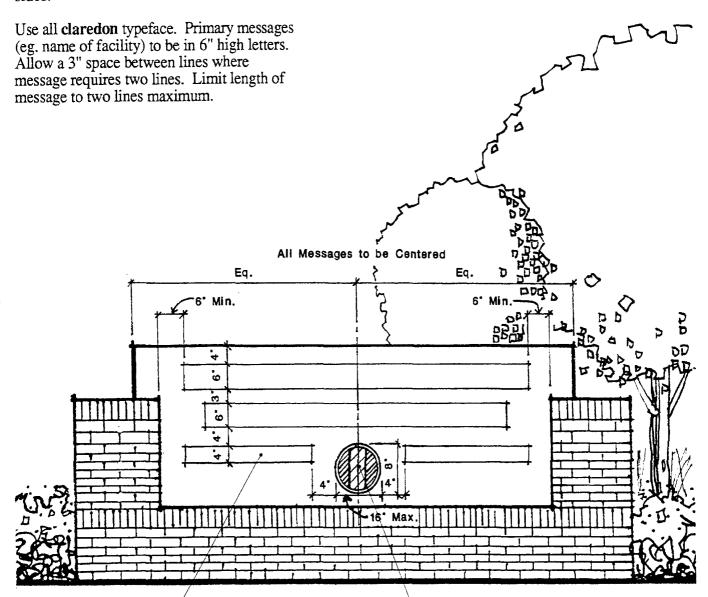
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Sign Layout Type C; Monumental

All messages to be centered on sign with equal space remaining on the right and left sides. Minimum 6" space must be allowed at sides.



Secondary information is to be minimized or omitted. When necessary, it is to be placed at the bottom of the sign, 4" below the primary message.

Unit emblems and insignia may be placed center below message. 8" h. x 16" w. max. size.

Projects

GW TH TT TP SS OS FA FH CS

Project 1 Officer's Club Improvements Parking Lot and Grounds Improvements \$ 470,957 Project 2 Anderson Fieldhouse Parking Lot Improvements Upgrading of Parking Lot and Landscape \$ 580.198 Project 3 Marshall Road/Troop Movement Path Troop, Pathway and Roadway Improvements \$ 116,266 Project 4 Sheppard Place Ground Improvements, Upgrading of Courtyards and Parking \$1,040,995 Lots Project 5

\$ 117,765

\$ 316,238

\$ 136,398

800 Block/Cameron Place Courtyard

Courtyard Mustering and Recreational

Transportation Museum Improvements, Grounds, Parking, and

Anderson Fieldhouse Entrance

Improved Pull-Off, Canopy, Roof,

Improvements

Space

Project 6

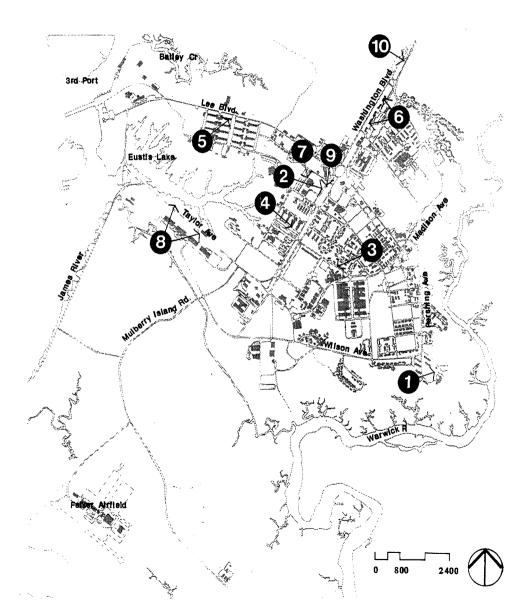
Project 7

Display Areas

Improvements,

Walkway, Entry

Project 8	
Taylor Avenue Landscaped Edge Landscape Screening of Warehouse Storage	\$ 77,020
Project 9	
Washington Boulevard Realignment Roadway, PX Turn Lane, and Edge Improvements	\$ 294,725
Project 10	
Main Gate Improvements Upgrading of Roadway, Parking, Signage, and Landscape	\$ 146,38



Officers' Club Improvements

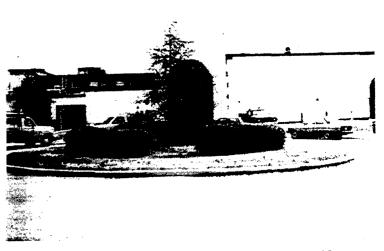
(Page 1 of 4)

The Officers' Club is a frequent point of interest to visiting VIP's and post visitors. Though the Officers' Club is not in a highly visible area on post, tucked away behind Unaccompanied Officers' Housing Barracks and behind a steam plant, the treatment of the approach drive and parking area is important because it will create the first impression of the facility. Providing a clearly organized approach to the front door, organizing the parking area closest to club facilities, and separating the grounds between club grounds, barracks, and service facilities are the desired goals of this project. To achieve this, project improvements include:

- Screening the steam plant at the main club entrance with evergreen plantings.
- Creating a main entrance area with new signage, lighting, plantings, and planted median.
- Replacing plantings at the VIP drop-off zone at the main club building entrance with lower ornamental plantings.
- Separating club parking from UOQ Barracks parking by dividing up the parking lot with curbed planted islands.
- Adding new plantings, lighting, signage, bituminous resurfacing, and striping to the parking lot and entry roads.
- Reorganizing the service area for the steam plant, adding additional club parking and narrowing the service entrance from Wilson Ave.

Page 3 offers an alternate approach via Pershing Avenue. The cost estimate remains the same for either approach.

Use design criteria for community facilities within the Installation Design Guide for roadway, parking lot, site furnishings, signage, and plantings.



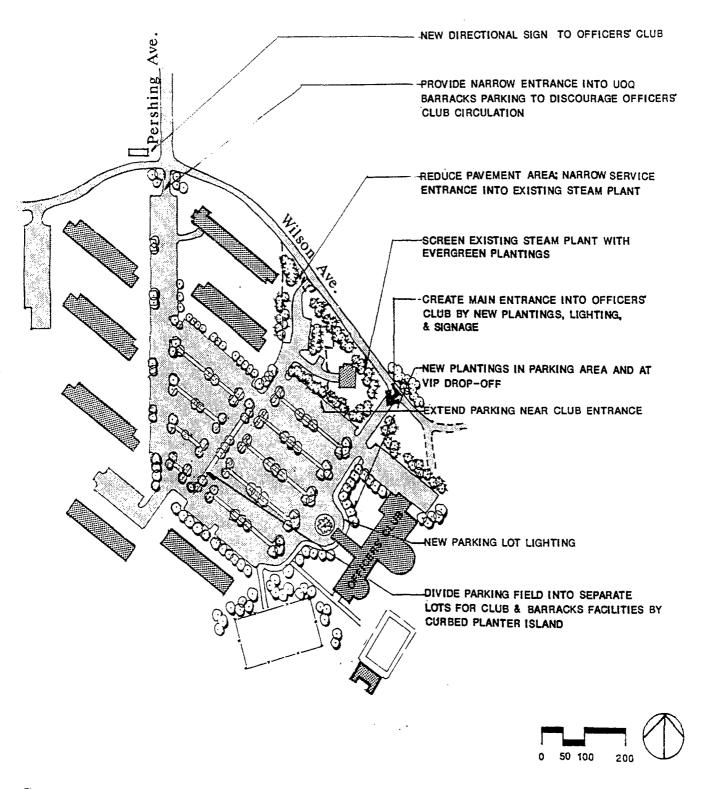
New ornamental plantings of a lower height would not block the view of the main Officers' Club entrance.



New lighting, landscaping, and improved vehicular circulation within parking lots would improve its efficiency and attractiveness.

Officers' Club Improvements

(Page 2 of 4)



Conceptual Plan

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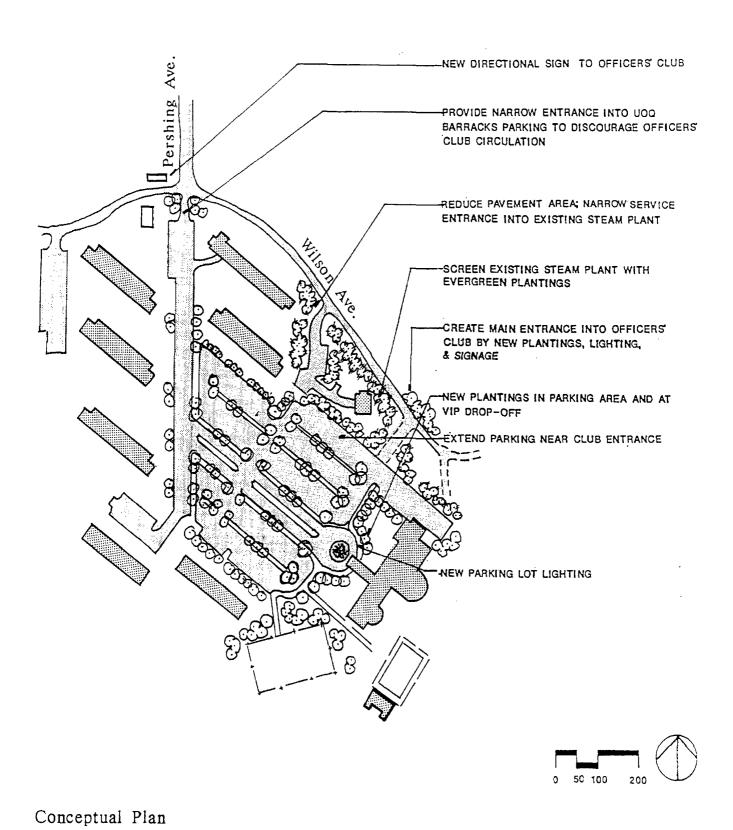
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Officers' Club Improvements

(Page 3 of 4)

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1. COMPONENT FY 19	MILITARY CONS	TRUCTI	ON PROJ	ECT DA	ATA E.O.	AŸE
3. INSTALLATION AND LOC	ATION		4. PROJEC	TTITLE		
Fort Eustis, New	port News, Virg	ginia	0.	fficer's C	lub Improvemen	nts
5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJE	CT NUMBE	R 8.	PROJECT COS	r (\$000)
	9. COS	T ESTIMA	TES			
	ITEM		U/M	OUANTI	TY COST	COST (\$000)
Supporting Facility						401,063.00
Storm Drainage			LF	500	30.90	(15,450.00)
Catch Basins			EA	4	1,133.00	(4,532.00)
Bituminous Resurfacing	; - Mein Pkg. Ara		5Y	14,540	9,27	(134,786.00)
f Situminous Pavement			žY	1,470	19.30	(28,371.00)
Parking Striping		LF	7,780	0.80	(6,224.00)	
Congrete Curbs		LP	2,600	15.45	(43,260.00)	
Plantings - Ornamenta	1 Trees		5A	15	155.00	(2,325.00)
Canopy Tre	ees		- EA	137	670.00	(91,790.00)
Evergreen	Trees		EA	77	165.00	[12,705.00)
Shoubs	v		₽ SA	70	31.00	(2,170.003
Groundcov			SP	2,000	2.32	1 4,640.00)
Parking Got Lights -			EA	3	2,500.00	(22,500.00)
Parking Lot Lights ~	Single		EA	9	2,000.00	(19,000.00)
Pedestrian Lighting			EA	4	1,300.00	(7,200.001
Signage - Directional			EA	2	135.00	(210.00)
Signage - Identificat			SA	2	600.00	{ 1,200.307
Birgminous Pavement R	EDIDAUT .		SY	1,300	4.40	(5,720.00) 401,083.00
1			1			20.054.00
Contingency Percent (5.0%) Total Contract Cost			-			421,137.00
Design Fee (6.0%)			•			25,268.00
Total			-	1		446,405.00
Supervision Insp. and Over	head (5.5%)					24,552.00
Total Request	•					470,957.00
1			1	1	}	}

10. DESCRIPTION OF PROPOSED CONSTRUCTION

DESCRIPTION OF PROPOSED CONSTRUCTION

Primary improvements within the scope of this project include improvements to the main entrance off of Wilson Boulevard and to the parking lot. Making a clear marked approach to the club facility would be achieved by narrowing the entrance into the U.O.Q. housing off of Pershing Avenue and by adding new plantings to screen the housing area as well as the steam plant on Wilson Avenue. New signage, lighting, and plantings would be added to the main club entrance. Lower plantings at the VIP drop-off would replace existing plantings. Parking lot improvements include separating U.O.Q. barracks parking from club parking by dividing the lot with cutbed planted islands. Additional new plantings, lighting, signage, and new parking area near the club would be included as well. Reorganizing the service area for the sceam glant would Reorganizing the service area for the sceam plant would involve adding additional club parking and narrowing the service entrance from Wilson Avenue.

Demolition would include selected bituminous pavement and concrete curb removal as required for parking lot reorganization. Handicap parking spaces and curb cuts for accessibility would be provided as required.

Coordinate all improvements with the applicable design criteria in the Installation Design Guide.

Anderson Fieldhouse Parking Lot Improvements

The parking lot for Anderson Fieldhouse needs general upgrading from the front drop-off on Pickwick Drive to the edge of the playing fields to the west. Improvements to make the parking area more functional and attractive are:

- Minimizing curb cuts off of Tyler Ave. and Jackson Ave. by curbed planted strips.
- Providing access to the parking lot directly from the pull-off area at the main entrance.
- Creating a pedestrian route through the parking lot from the main entrance of the fieldhouse to the playing fields by the use of curbed planted islands, crosswalks, and lighting.
- New signage at the main entrance.
- Planted berms separating parking from playing fields.
- New parking lot improvements--lighting, plantings, resurfacing, and new striping.

Coordinate all improvements with design criteria within the Installation Design Guide for paving, lighting, plantings, signage, and site furnishings. (See Project No. 7 for Anderson Fieldhouse Entrance Improvements.)

The following areas are to be included in the project scope-of-work:

- Parking lot west of Buildings #675 and #643.
- Parking lots east of Buildings #670 and #671, and west of Buildings #601 and #602.

(Page 1 of 3)



New plantings, signage, lighting, and pedestrian crosswalk would upgrade the safety and appearance of the front of Anderson Fieldhouse.



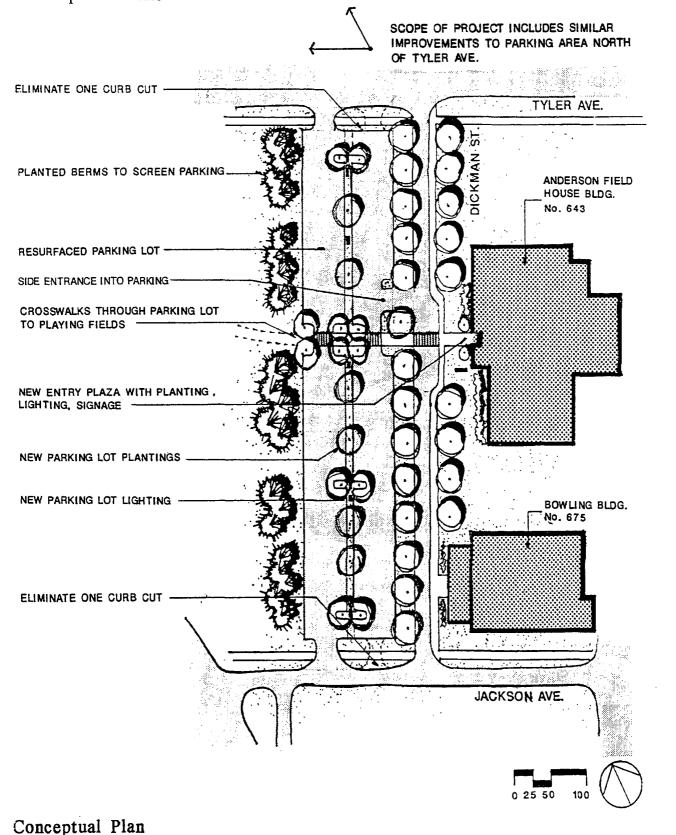
A pedestrian crosswalk through the parking lot to playing fields and new lighting and landscaping would upgrade the parking area.

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Anderson Fieldhouse Parking Lot Improvements

(Page 2 of 3)



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FY 19___MILITARY CONSTRUCTION PROJECT DATA

3. INSTALLATION AND LOCATION
Fort Eustis, Newport News, Virginia

5. PROGRAM ELEMENT
FY 19___MILITARY CONSTRUCTION PROJECT DATA

4. PROJECT TITLE

Anderson Fieldhouse Parking Improvements

5. PROGRAM ELEMENT
FY 19___MILITARY CONSTRUCTION PROJECT DATA

4. PROJECT TITLE

Anderson Fieldhouse Parking Improvements

5. PROGRAM ELEMENT
FY 19___MILITARY CONSTRUCTION PROJECT DATA

4. PROJECT TITLE

Anderson Fieldhouse Parking Improvements

5. PROGRAM ELEMENT
FY 19___MILITARY CONSTRUCTION PROJECT DATA

4. PROJECT TITLE

Anderson Fieldhouse Parking Improvements

5. PROGRAM ELEMENT
FY 19___MILITARY CONSTRUCTION PROJECT DATA

4. PROJECT TITLE

B. PROJECT COST (\$000)

9. COST ESTIMATES								
ITEM	U/M	QUANTITY	UNIT COST	CØST (\$000)				
Supporting Facility				494,116.00				
Bituminous Pavement	SY	500	19.30	(9,650.00)				
Bituminous Resurfacing	S¥	23,000	9.27	(213,210.00)				
Concrete Curb	LF	3,000	15.45	(46,350.00)				
· Parking Lot Lighting - Single	EA	15	2,000.00	(30,000.00)				
Pedestrian Lighting	EA	s	1,800.00	(9,000.00)				
Plantings - Canopy Trees	EA	100	670.0C	(67,000.00)				
Ornamental Trees	EA	5	155.00	(775.00)				
Evergreen Trees	EA	75	165.00	(12,375.00)				
Shrubs	EA	50	31.00	(4,650.00)				
Groundcover	SF	1,000	2.32	(2,320.00)				
Turf Resecting	SY	9,700	0.75	(7,275.00)				
Parking Lot/Crosswalk Striping	LF	17,100	0.80	(13,680.00)				
Bituminous Pavement Removal	SY	1,400	4.40	(6,160.00)				
Concrete Curb Removal	LF	2,500	5.75	(14,375.00)				
Concrete Pavement Removal	SY.	220	9.80	{ 2,156.00}				
Concrete Pavement	SF	3,300	7.20	(23,760.00)				
Trash Receptacle	EA	3	200.00	(600.00)				
Berm Formation	CY	2,300	4.33	(9,959.00)				
Berm Grading	SY	4,700	4.43	(20,821.00)				
Subtotal				494,116.00				
Contingency Percent (5.0%)	1		1	24,706.00				
Total Contract Cost			ļ	518,822.00				
Design Fee (6.0%)		1		31,129.00				
Total				549,951.00				
Supervision :Insp. and Overhead (5.5%)				30,247.00				
Total Request				580,198.00				
i e e e e e e e e e e e e e e e e e e e	i	1	1	ı				

10. DESCRIPTION OF PROPOSED CONSTRUCTION

Improvements to the parking area, in front of Anderson fieldhouse will result in a more efficient and attractive parking lot. Improved access would include eliminating some of the curb cuts off of Tyler Avenue and Jackson Avenue, and providing access to the lot from Dickman Street opposite the drop off area in front of the fieldhouse. Pedestrian access through the lot would extend from the fieldhouse entrance to the playing fields by crosswalks and curbed planted islands. Landscape improvements include canopy trees within the lot and planted berms on the outside perimeter of the parking lot. New parking lot lighting would be provided as well.

Demolition includes selected pavements and curbs for curb cut elimination and additional planted islands. Handicap parking and accessibility would be provided as required.

Ccordinate improvements will all applicable design criteria within the Installation Design Guide.

Marshall Road/Troop Movement Path

Marshall Road is heavily used for troop movement in the Applied Instruction Area from the barracks to the training facilities off of Madison Ave. (Bunker Training Area). Converting this road into a troop movement path and providing limited one-way vehicular access to residential units on the east end of Marshall Rd. would serve the circulation requirements for both military and civilian users, creating a minimum of conflict between vehicular and pedestrian movement. The scope of the project would include the following improvements:

- Eliminating off-street parking off Marshall Rd. and providing a new parking lot for residential parking, screening with plantings.
- Dividing Marshall Rd. into 12 ft. lanes, divided by a 5 ft. median for troop and vehicular circulation.
- Resurfacing the troop movement path with a designated bituminous material for pedestrian use.
- Providing new plantings, lighting, signage, and site furnishings.
- Relocating overhead utilities to the rear of facilities or burying.

The resulting roadway would be suitable for heavy troop use, residential circulation, and emergency vehicular access. This project would be coordinated with other post future improvements and would follow all applicable design criteria within the Installation Design Guide.

(Page 1 of 3)



Marshall Rd. is one of the most heavily used troop movement paths on post.



Parking should be prohibited on both sides of Marshall Rd.

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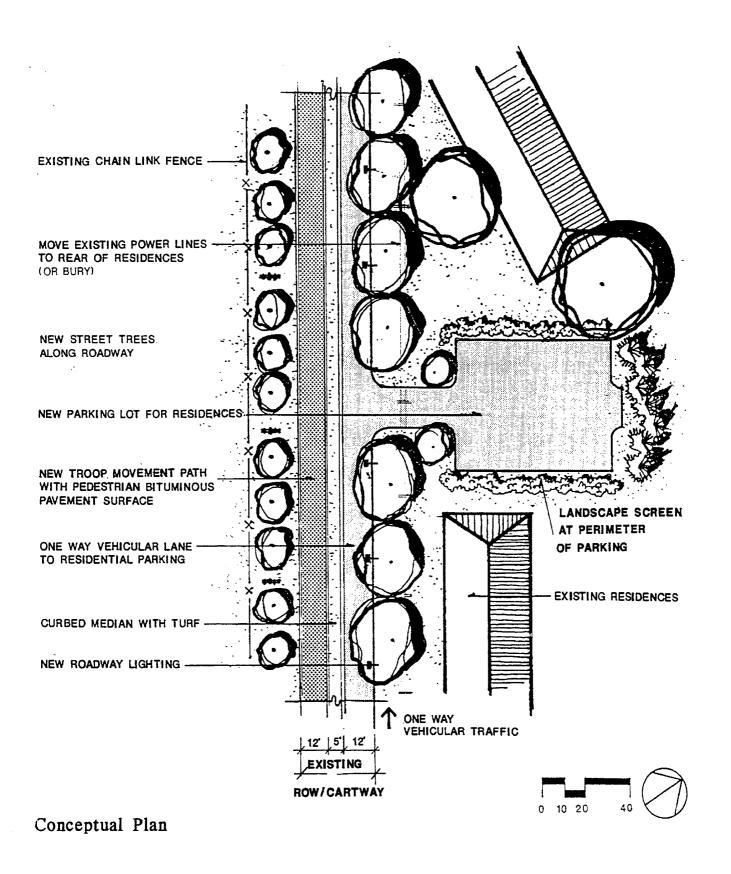
Marshall Road/Troop Movement Path

(Page 2 of 3)

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2. DATE 1. COMPONENT FY 19 MILITARY CONSTRUCTION PROJECT DATA ARMY 3. INSTALLATION AND LOCATION 4. PROJECT TITLE Fort Eustis, Newport News, Virginia Marshall Rd./Troop Movement 6. CATEGORY CODE 5 PROGRAM ELEMENT B. PROJECT COST (\$000) 7. PROJECT NUMBER 9. COST ESTIMATES COST UNIT ITEM U/M QUANTITY COST (00002) 97,173.00 Supporting Facility (11,136.00) 19.30 Bituminous Pavement Parking SY 577 (18.540.00) Bituminous Resurfacing 2,000 9.27 (41,252.00) Concrete Curb 2,670 15.45 Plantings - Canopy Trees 670.00 (4.590.00) EA (2,015.00) Ornamental Trees 155.00 13 ΕA Evergreen Trees (1.320.00) 165.00 EΑ 3 Shrubs (3,348.00) 31.00 ΞΑ 108 Turf Seeding (2,813.00) 3,750 0.75 SY Parking Lot/Roadway Lighting (10,000.00) 2,000.00 5 ΕA Parking Lot Striping { 224.00} 28C 0.80 LF (1,835.00) Bituminous Pavement Removal 4.40 SY 417 97.173.00 Subtotal 4,859.00 Contingency Percent (5.0%) 102.032.00 Total Contract Cost 6,122.00 Design Fee (6.0%) 108.154.00 Total 8,112.00 Supervision Insp. and Overhead (7.5%) 116.266.00 Total Request

10. DESCRIPTION OF PROPOSED CONSTRUCTION

Converting Marshall Road into a combination troop movement lane and one way vehicular lane, divided by a curbed median, is the scope of this project. Special bituminous pavement designated for pedestrian use would be used for the troop path and regular roadway bituminous for roadway use. Additional improvements would include eliminating off-street parking off Marshall Road, providing separate lots for residential parking, new roadway lighting, and landscape improvements. Recommended but not included in project costs are the burial or relocation of existing utility lines to the rear of the residence.

Demolition includes removal of selected bituminous pavement such as in the median strip. Handicap facilities would be provided in residential parking lots, otherwise handicap access would be provided as required.

Consult the Installation Design Guide for all applicable design criteria for roadways, pedestrian walkways, lighting, landscaping, and parking lots.

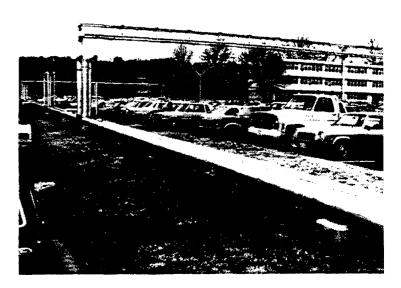
Sheppard Place Grounds Improvements

The purpose of the extensive improvements within this project is to upgrade the courtyards and parking lots for the barracks for well-ordered troop training areas. Providing adequate troop mustering space within the grounds and parking areas on both paved and turf areas, and redesigning parking areas for more efficient circulation, would create areas more functional and attractive for heavy troop use.

Site improvements include:

- Paved troop movement spine of adequate width from Darcy Place to Pearl Place, with crosswalks, plantings, and pedestrian lighting through parking lots and courtyards.
- Conversion of parking areas closest to designated barracks for mustering areas and overflow parking as required.
- Extension of designated parking areas.
- New plantings, lighting, and site furnishings in courtyards and parking areas.
- Burial of steam lines across roadway aisles, and providing curbed planted islands around them (N.I.C.).
- Screening of existing service areas with evergreen plantings (or screen walls).

Coordinate all improvements with design criteria within the Installation Design Guide for paving, lighting, plantings, and site furnishings. (Page 1 of 3)



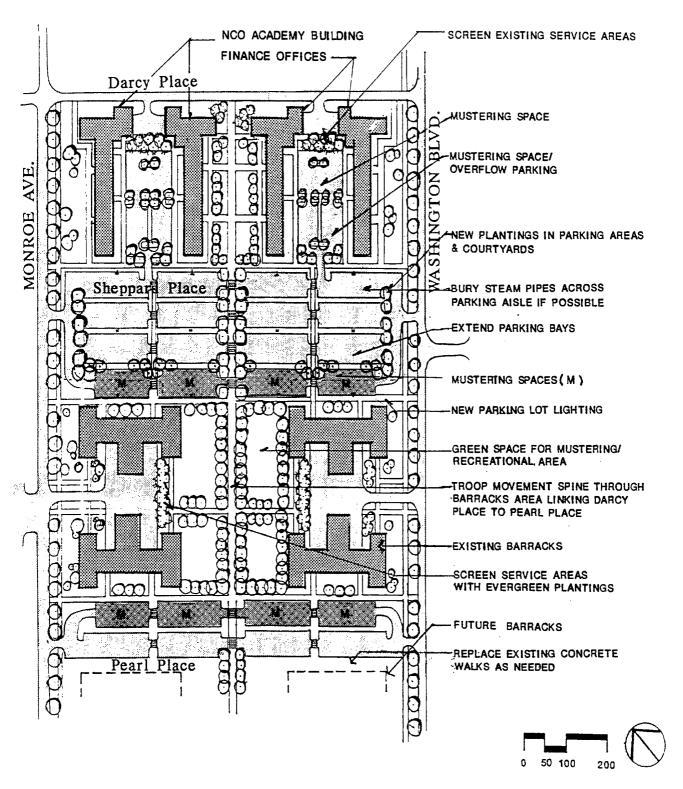
Steam pipes in parking areas should always be located in curbed islands. Pipes across roadway aisles should be buried if possible.



Reorganizing parking areas would allow the conversion of areas closest to barracks for troop mustering space and overflow parking.

Sheppard Place Grounds Improvements

(Page 2 of 3)



Conceptual Plan

1. COMPONENT				2. DATE		
ARMY	FY 19MILITAR	Y CONSTRUCTI	ON PROJECT	r data		
3. INSTALLATION A	ND LOCATION		4. PROJECT TITLE			
Fort Eustis,	Newport News, V	Virginia	Sheppard Place			
5. PROGRAM ELEME	NT 6. CATEGORY	CODE 7. PROJ	ECT NUMBER	B. PROJECT COST (\$000)		
		9 COST ESTIMA	750			

ITEM	υ/м	QUANTITY	UNIT COST	COST (\$000)
Supporting Facilities				#96.546.00
Bituminous Pavement	SY	6,933	19.30	(133,837.00)
Bituminous Resurtacing	SY	29,778	9-27	(276,042.00)
Concrete Walks	SF	1,900	7.20	(13,660.00)
Concrete Curbs (no replacement, new only)	LE	6,980	15.45	(107,841.00)
Plantings - Canopy Trees	53	180	670.00	(120,600.00)
Ornamental Trees	EA	32	155.00	(4,960.00)
Evergreen Trees	EA	50	165.00	(B,250.C0)
Shrubs	EA	160	31.00	(4,960.00)
Turf Seeding	SY.	16,666	0.75	(12,450.00)
Parking Lot Lighting-Single	EA	16	2,000.00	(32,000.00)
Packing Lot Lighting - Double	EA	10	2,500.00	(25,000.00)
Pedestrian Lighting	. EA	15	1,630.00	(27,000.00)
Parking Lot/Crosswalk Striping	LF	20,660	0.80	(16,528.00)
Benches	EA	12	500.00	(6,000.00)
Trash Receptacles	EA	8	200.00	(1,600.00)
Bituminous Pavement Removal	SY	9,580	4.40	(42,152.00)
Concrete Walk Removal	sr	253	9.80	(2,479.00)
Concrete Curb Removal	LF	2,640	5.75	(15,180.00)
Grading Preparation	sr	6,933	4.43	(30,713.00)
Bollards - Metal Pipe	EA	8	92.70	(742.00)
Bituminous Troop Path	sr	1,520	1.85	(2,812.00)
Sike Rack	l	7	250.00	(1,750.001
Subtotal	EA	1	230.00	886,546.00
Contingency Percent (5.0%)	Ĭ		į	44,327.00
Total Contract Cost				930,873.00
Design Fee (6.0t)				55,852.00
Total	1			986,725.00
Supervision Insp. and Overhead (5.51)			į	54,270.00
Total Request	ţ		1	1,040,995.00

10. DESCRIPTION OF PROPOSED CONSTRUCTION

Steam Pipe Burial or Relocation (N.I.C.)

Upgrading the parking lots and courtyards of Sheppard Place barracks are the major goals of this project. Parking lot improvements include the extension of some of the parking lots, and creating troop mustering areas in lots closest to barracks. Landscaping, lighting, and the elimination of redundant curb cuts off major roadways are additional improvements. Courtyard improvements include a troop movement path of bituminous pavement from Darcy to Pearl Place, landscaping, site furnishings, and pedestrian lighting improvements. Screening service areas with evergreen plantings from courtyard and mustering areas are included as well. Not included in project costs, but recommended items are the burial or relocation of above-ground steam lines that are currently outside of curbed parking aisles.

Demolition would include selected pavement areas such as sidewalks, curbs, and bituminous pavement in the location of curbed planting aisles. Handicap accessibility in courtyards and handicap parking facilities are provided.

Coordinate all improvements with design criteria within the Installation Design Guide for the Troop Facilities visual zone.

800 Block Cameron Places Courtyard Improvements

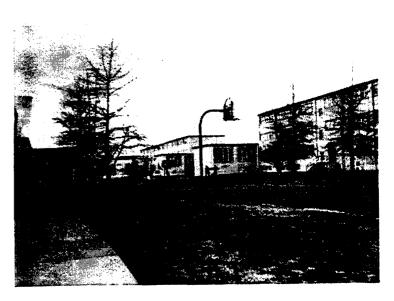
The main improvements within this project include the upgrading of grounds for troop activities. The grounds presently provide varying types of troop mustering space and small recreational courts. Bituminous pads of varying sizes can be found in the courtyards, and many of them have bare turf areas due to a combination of overuse and soil erosion. This is a prototype project, which may be used for any number of the courtyard spaces at the 800 block, as funds are made available. The scope and cost estimate include one courtyard and should be multiplied when more than one courtyard is to be funded.

Barracks site improvements include:

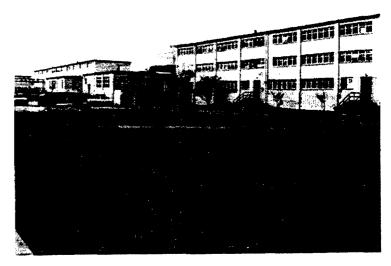
- Bituminous mustering areas, edged with concrete walks, connected by walks to parking, building entrances, and other destinations.
- Concrete walks of adequate width, replacing existing as needed for access and PT training purposes.
- Improved turf and new low maintenance plantings.
- Pedestrian lighting.
- New signage as required.
- Screen walls and evergreen plantings to screen service area.
- New site furnishings--benches, trash receptacles, bike racks.
- Entry door and stair improvements.

Coordinate all improvements with the applicable design criteria within the Installation Design Guide for the Troop Housing Zone.

(Page 1 of 4)



New mustering areas of adequate size do not require the paving of the entire barracks courtyard; all new mustering areas should be well placed and be edged with concrete wallks.

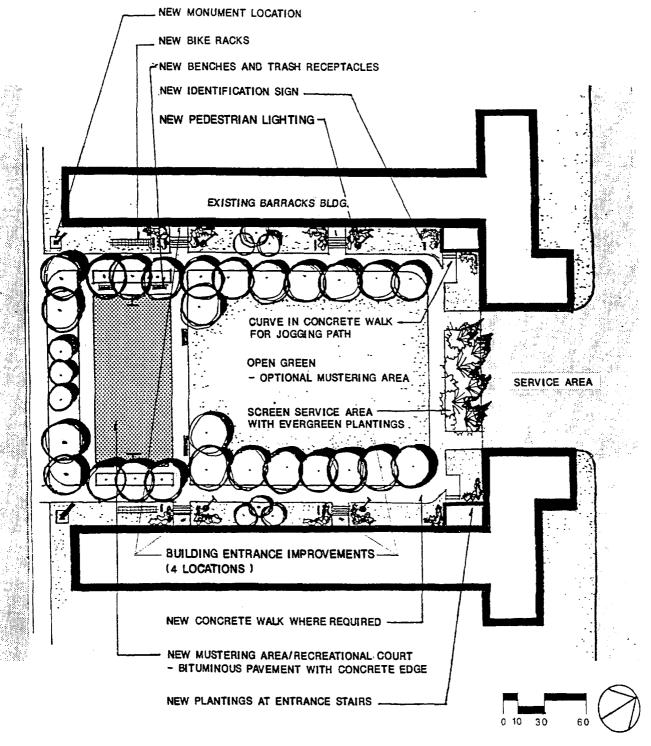


Screen adjacent service areas from barracks courtyards with evergreen plantings.

800 Block Cameron Places Courtyard Improvements

(Page 2 of 4)

(SCHEME A WITH SERVICE AREAS)



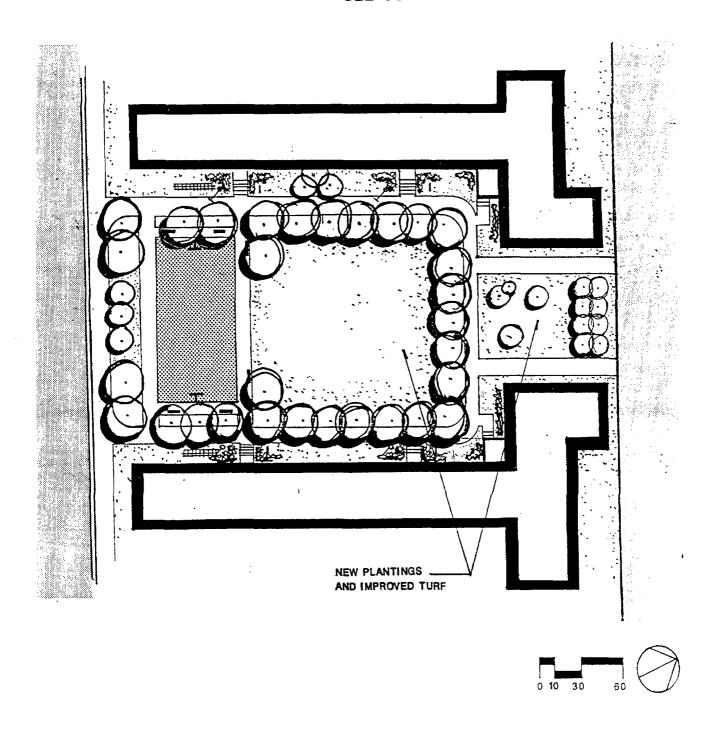
Conceptual Plan

5.Project #5B

800 Block Cameron Places Courtyard Improvements

(Page 3 of 4)

(SCHEME B WITHOUT SERVICE AREA) SEE SCHEME A FOR NOTES.



Conceptual Plan

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2. DATE 1. COMPONENT FY 19 MILITARY CONSTRUCTION PROJECT DATA ARMY 3. INSTALLATION AND LOCATION 4. PROJECT TITLE Barracks Courtyard Improvements Fort Eustis, Newport News, Virginia (Scheme A or B) 5. PROGRAM ELEMENT 6. CATEGORY CODE 7. PROJECT NUMBER B. PROJECT COST (\$000)

9. COST ESTIMATES								
ITEM	U/M	QUANTITY	UNIT	CØST (\$000)				
Supporting Facility				98,427.0				
Situminous Pavement		535	19.30	(10,712.0				
Bituminous Removal	SY	579	4.40	(2,548.0				
Concrete Pavement		5,820	7.20	(41,904.0				
Pedestrian Lighting	43	6	1,800.00	(10,800.0				
Plantings - Canopy Trees	EA	26	670.00	(17,420.0				
Ornamental Trees	54	15	155.00	(2,325.0				
Evergreen Trees	٤١	à	165.00	(1,320.0				
Shrubs	67	120	31.00	(3,720.0				
Turf Seeding	SY	3,555	0.75	(2,666.0				
Entrance Improvements (4 locations per bldg.)	EA	4	2,500.00	(10,000.0				
Benches	EΑ	6	500.00	(3,000.0				
Trash Receptacles	. EA	2	550.00	(1,100.0				
Bike Rack	£Α	2	250.00	(500.0				
Signage - Identification -(No Brick)	EΑ	4	103.00	(412.0				
Subtotal				98,427.				
Contingency Percent (5.0%)	1			4,921.				
Total Contract Cost		1		103,348.				
Design Fee (6.0%)		1		6,201.				
Total		1]	109,549.				
Supervision Insp. and Overhead (7.5%)				8,216.				
Total Request				117,765.				
	}	1	1	1				

10. DESCRIPTION OF PROPOSED CONSTRUCTION

Improvements to existing courtyard grounds include facilities for training and recreational purposes. Paved mustering spaces that can be used for playing courts in off-hours are provided with new bike racks, benches, and trash receptacles to the side. Improved walks can be used for PT running. Landscaping improvements include turf re-seeding, canopy and ornamental trees and shrubs for courtyards, and evergreen trees and shrubs for screening service areas. New identification signage and pedestrian lighting would be provided as well.

Demolition would include existing pavements to be removed. Handicap accessibility would be provided into courtyards, however building accessibility is outside of the scope of this project.

Coordinate all improvements with the applicable design criteria within the Installation Design Guide for the Troop Facilities zone.

Transportation Museum Improvements

The Transportation Museum is in a highly visible area on post, near the Main Gate, and serves as a main attraction for post visitors. Because the museum is a significant storehouse of Fort Eustis' past, it can also symbolically project its future, and the importance of its presentation on Washington Blvd. is great. The major objectives of this project are to improve the display areas in layout and setting, reorganize parking and service access, consolidate facilities for exterior and interior display, and to provide direct access to the museum from the southbound lanes of Washington Blvd.

Grounds improvements are the following:

- New access road to museum from Washington Blvd. (south) with new left turn lane on Washington Blvd.
- New visitor parking.
- Relocated location for service access.
- New attractive fencing around existing display areas.
- New directional and identification signage.
- Relocated Bus Stop Pull-off Zone
- Improved paving materials for pedestrian walks to the main facility entrance.

Materials selected should be in conformance to those within the Gateway and Community Services zones. Follow Installation Design Guide criteria for all improvements.

(Page 1 of 4)



Fencing of display areas along Washington Blvd. needs to be improved in appearance. Relocate the bus pull-off to a more convenient location.



Screen parking areas along Washington Blvd. with planted berms and provide new identification signage for the museum.

(Page 2 of 4)



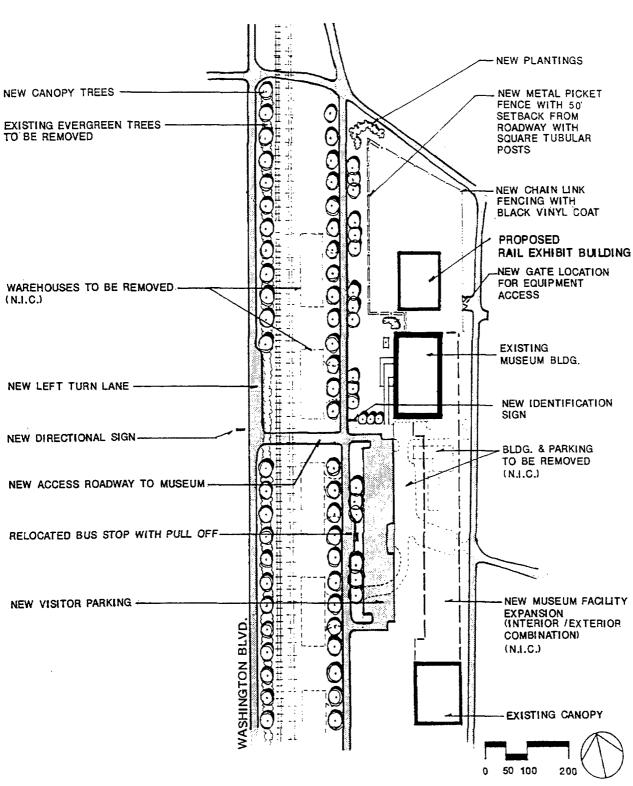
Remove miscellaneous pavements and parking off of Washington Blvd. Relocate utilities behind the museum facility or bury underground.



Improved landscaping, signage, and pedestrian lighting would upgrade and increase the visibility of the museum.

Transportation Museum Improvements

(Page 3 of 4)



Conceptual Plan

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I. DATE 1. COMPONENT FY 19__ MILITARY CONSTRUCTION PROJECT DATA ARMY 3. INSTALLATION AND LOCATION 4. PROJECT TITLE Fort Eustis, Newport News, Virginia Transportation Museum Area Improvements 5. PROGRAM ELEMENT 6. CATEGORY CODE 7. PROJECT NUMBER 8. PROJECT COST (\$000)

9. COST ESTIMATES								
ITEM .	U/M	QUANTITY	UNIT COST	CØST (\$000)				
Supporting Facility				269,319.00				
Situminous Paving	SY	3,753	19.30	(72,529.00)				
Bituminous Paving Removal	SY	3,536	4.40	(15,560.00)				
Concrete Curb	L?	4,480	15.45	(69,216.00)				
Concrete Walk	SP	300	7.20	(2,160.00)				
Metal Picket Fence		930	25.65	(23,585.00)				
Vinyl-clad Chain Link Pence	lad Chain Link Pence		20.00	(9,000.00)				
Chain-link Fence Removal	LF	1,380	10.80	(14,904.00)				
Signage - Direction	EA	1	155.00	(155.00)				
Signage - Identifications	EA	1	600.00	(600.00)				
Dighting - Parking Lot		3	2,000.00	(6,000.00)				
Cighting - Pedestrian		2	1,800.00	(3,600.00)				
Flanting - Ornamental Trees		15	155.00	(17,229.00)				
Evergreen Trees	EA	20	165.00	(3,300.00)				
Canopy Trees		33	670.00	(32,110.00)				
Shrubs	. EA	50	31.00	(1,550.00)				
Turf Seeding - Front		7,335	0.75	(5,501.0))				
Groundcover	SF	1,000	2.32	(2,320.00)				
Subtotal				269,319.00				
Contingency Percent (5.0%)	1	1		13,466.00				
Total Contract Cost	1		1	282,785.00				
Design Fee (6.0%)				16,967.00				
Total		1	<u> </u>	299,752.00				
Supervision Insp. and Overhead (5.5%)			į	16,486.00				
Total Request				316,238.00				
	1							

10. DESCRIPTION OF PROPOSED CONSTRUCTION

DESCRIPTION OF PROPOSED CONSTRUCTION

Improvements for the transportation museum include display area containment, parking area, bus-pull off, new access road, service access to the tear, and landscaping improvements. The display area security fencing needs upgrading, particularly along Wasnington Boulevard frontage. Metal picket fence along the front of the property and black vinyl chain link fencing to the side and rear would be used. Landscape improvements along the front perimeter and parking areas, and new parking lighting would be included as well. Keeping service access to the rear off of 28th Street is also recommended, as well as keeping visitor parking accessible from the front. Providing direct access to the museum from the southbound lanes of Washington Boulevard would require a new access road into the visitors parking area. New directional signage, relocated bus stop near parking, and new lighting, landscaping, and site furnishing are included as well.

Demolition would include existing paving areas, existing fencing, and the existing bus stop pull-off. Removal of existing buildings on site is not included in project costs. Handicap accessibility for walks and parking facilities would be provided.

Follow all applicable design criteria for the Gateway zone for site furnishings, lighting, parking lots, signage, and

11. REQUIREMENTS: N/A

PROJECT:

Transportation Museum Improvements Fort Eustis, Newport News, Virginia

Warehouse and RR Track Removal (N.I.C.) Utility Relocation (N.I.C.)

Anderson Fieldhouse Entrance Improvements

Project Description

An entrance canopy is to be added to the entry, leading from the auto drop-off area to the existing entrance doors. The canopy is to be steel frame clad in prefinished aluminum. The roof is to be a sloped standing seam-type aluminum roofing system.

The existing concrete steps and walkway are to be replaced with new sloped pavement graded to eliminate the steps. Low brick walls, with precast concrete cap, may be used at the edge of this entry walkway. New trash receptacles and outdoor seating and signage are to be installed.

A 4 x 4 skylight is to be added in the ceiling of the existing entrance vestibule. The existing drop-off lane is to be removed and replaced with a simple pullover lane along the access drive.

Landscaping is to be included in the areas flanking the entrance and along the walkway leading to the parking lot.

(Page 1 of 4)



The fieldhouse entrance could benefit from upgraded landscaping, lighting, signage, and paving.

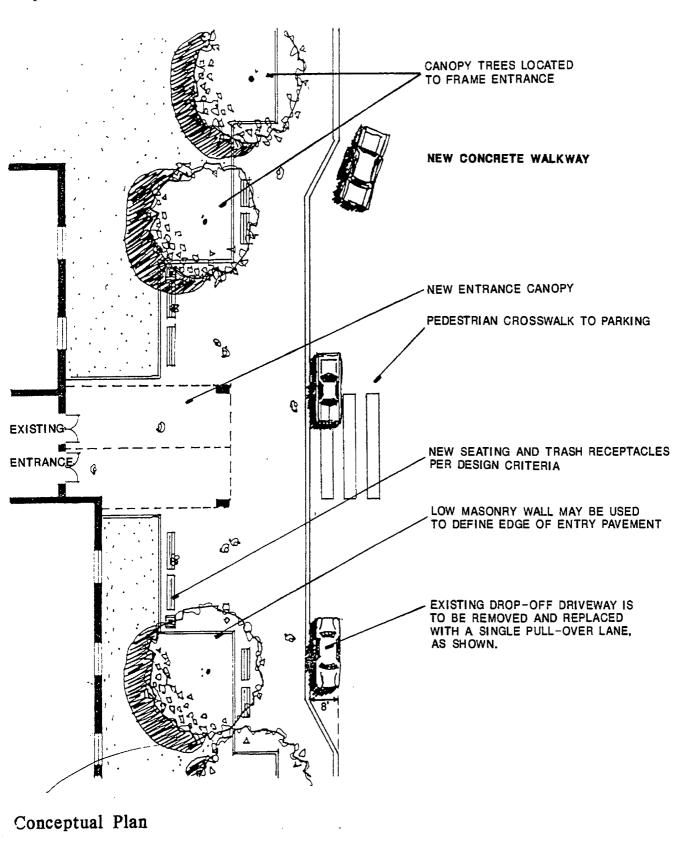


Extending a canopy out to the curb would increase the visibility of the fieldhouse entrance.

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Anderson Fieldhouse Entrance Improvements

(Page 2 of 4)



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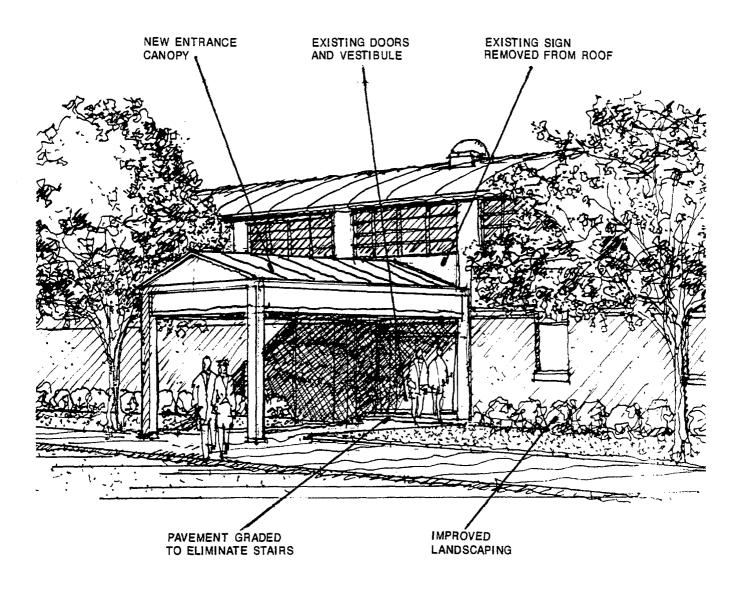
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Anderson Fieldhouse Entrance **Improvements**

(Page 3 of 4)



Conceptual View of Entry

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□ME

☐ EE

1. COMPONENT 2. DATE								
FY 19MILITARY CONSTRUCTION PROJECT DATA								
ARMY								
3. INSTALLATION AND LOC	ATION	:	4. PROJ	ECT TITL	.E			
Fort Eustis, Newport News, Virginia Anderson Fieldhouse Entrance Improvements.								
5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER 8. PROJECT COST (5000			(\$000)			
	9. COST	ESTIMA	TES					
	ITEM	_ _	U/N	A QUAI	NTITY	UNIT COST	COST (\$000)	
Building Facility							114,000.00	
Demolition (concr roof opening for	ete stairs, paving, skylight, sign, etc)				ļ		(12,000.00)	
Poundation work (footings, etc.)	excavation, concr.						(5,000.00)	
Masonry walls (at 20" height, with	edges of pavement, cast stove cap)						(10,000.00)	
Steel canopy fram						1	(20,000.00)	
Aluminum canopy r	oof, facia & trim		1				(20,000.00)	
Roofing and flash	ning (at exist bldg.)		ļ				: 5.70.003	
Skylight in roof o	of exist. vestibule						(16,000.00)	
Replace/relocate	cato		}				(4,000.00)	
Replace conc. pav eliminate exist.							(5,000.00)	
Outdoor seating, Signage, etc.	trash recepticles,						(4,000.00)	
Lighting, electri	c						(3,000.00)	
Railings			1			1	(1,000.00)	
Landscapi ng						1	(8,000.00)	
Electric Sign							(3,000.00)	
Subtotal					-		114,000.00	
Contingency Perce	nt (5.0%)		į				5,700.00	
Total Contract Co.	st .						119,700.00	
Design Fee (6.0%)							7,182.00	
Total							126,882.00	
Supervision Insp.	and Overhead (7.5%)		}			ļ	9,516.00	
Total Request							136,398.00	
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10. DESCRIPTION OF PROPOSED CONSTRUCTION

Facade improvements to the entrance of Anderson Fieldhouse is the scope of this project, including new canopy, toof, entrance work, site furnishings, and landscaping. The canopy is to be steel frame clad in pre-finished aluminum. A sloped standing seam type aluminum roof is to be used the entrance walk. Low brick walls with a precast concrete cap is to be used. Refer to the Site Furnishings section in the Installation Design Guide for site furnishings selections for benches and trash receptacles. Also included is a 4 x 4 ft skylight in the ceiling of the existing entrance vestibule.

Demolition would include removal of bituminous pavement in the existing drop-off lane as well as the curbed island. The existing concrete walk and steps will be removed for a ramped walkway to accommodate handicap access.

Refer to all applicable design criteria for the Community Services visual zone for all improvements including architecture, landscape, and site furnishings.

11. REQUIREMENTS: N/A

PROJECT:

Anderson Fieldhouse Entrance Improvements Fort Eustis, Newport News, Virginia

Taylor Avenue Landscaped Edge

(Page 1 of 3)

The high visibility of the existing warehouses and railroad tracks on Taylor Ave. can be mitigated by the use of additional landscape screening and planted berms. Views from Reserve facilities, new barracks, and vehicular Taylor Ave. traffic would then be controlled more effectively.

Maintaining the existing building and parking lot setbacks and carefully planning the location of new facilities and railroad tracks would be some of the important future design considerations.

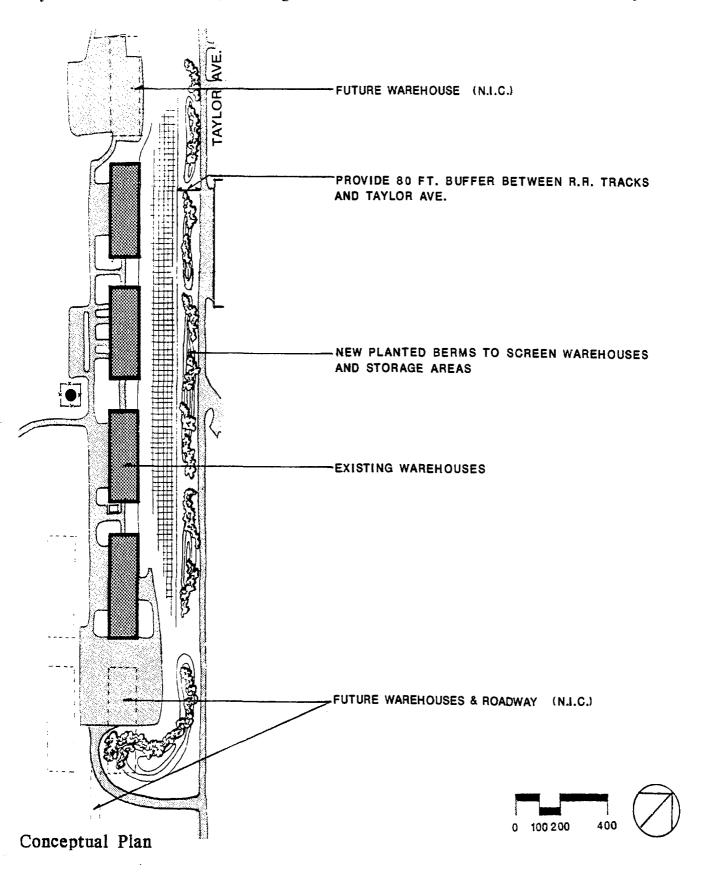
Design criteria for screening with berms and plant materials is included within the Installation Design Guide. Refer to the Plant Matrix for plant selections.



Planted berms would screen the existing railroad tracks and storage areas along Taylor Ave.

Taylor Avenue Landscaped Edge

(Page 2 of 3)



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5,373.00

77,020.00

2. DATE 1. COMPONENT FY 19__ MILITARY CONSTRUCTION PROJECT DATA ARMY 3. INSTALLATION AND LOCATION 4. PROJECT TITLE Fort Eustis, Newport News, Virginia Taylor Avenue Landscaped Edge 5. PROGRAM ELEMENT 6. CATEGORY CODE 7. PROJECT NUMBER 8. PROJECT COST (\$000) 9. COST ESTIMATES UNIT COST ITEM QUANTITY U/M COST (\$000) Supporting Facility 64,373.00 (13,726.00) Earthwork 3,170 4.33 CY Earthwork After Grading 4,756 4.44 (21.117.00) (17,655.00) 107 165.00 Plantings - Evergreen Tree EA 268 31.00 (8,308.00) Shrub SY 0.75 (3,567.00) Turf Seeding 4.756 SY 64,373.00 Contingency Percent (10.0%) 6.437.00 Total Contract Cost 70,310.00 Design Fee (5.0%) 3.541.00 74,351.00 Supervision Insp. and Overhead (5.0%) 3.718.00 Total Request 78,069.00 Subtotal 64,373.00 Contingency Percent (5.0%) 3.219.00 Total Contract Cost 67.592.00

10. DESCRIPTION OF PROPOSED CONSTRUCTION

Supervision Insp. and Overhead (7.5%)

Design Fee (6.01)

Total Request

The scope of this project includes screening the warehouse parking lots, storage areas, and the railroad tracks along Taylor Avenue. Earth berms, and evergreen trees and shrubs would be used as a screen.

An 80 ft. minimum setback along the avenue would require the removal of unused railroad tracks closest to Taylor Avenue (this expense is not included in the project costs). This would be the only demolition included in the project.

Handicap requirements are not applicable to this project. Design Criteria in the Installation Design Guide should be coordinated with all improvements within the Service Storage visual zone. Refer to the plant list for recommended plantings for screening.

11. REQUIREMENTS: N/A

PROJECT:

Taylor Avenue Landscape Edge Treatment Fort Eustis, Mewport News, Virginia

Washington Boulevard Realignment

Washington Boulevard, from Lee Boulevard to Darcy Place, could benefit from several major improvements to the roadway alignment and to the consolidation of parking for Community Services facilities.

Maintaining a consistent median width from Taylor Ave. to Lee Blvd. would allow greater expansion area for Community Services facility expansion and for parking directly adjacent. Removing existing parking in the median would eliminate the hazards of pedestrian crossings.

Roadway improvements include:

- New bituminous pavement and curbing.
- New street trees in realigned area, and landscaping in the median.
- Existing curb and bituminous pavement removal in roadway to be realigned.
- New left turn lane into the PX/Commissary Center.
- New roadway lighting in realigned area.
- Removal of parking in median.
- Burial and piping of the open ditch west of the existing roadway. (N.I.C.)

The resulting roadway alignment is to be coordinated with adjacent roadways, parking, and any future improvements of the post Master Plan. A traffic consultant is to be used for vehicular circulation design of this project. Follow all applicable design criteria within the Installation Design Guide.

(Page 1 of 3)



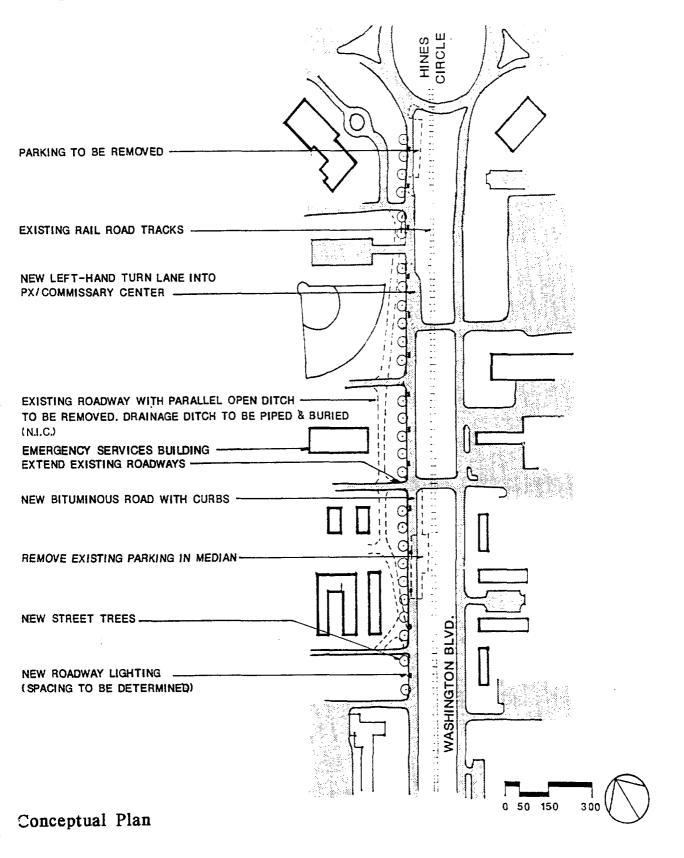
Removing parking in the median of Washington Blvd. and piping the open drainage ditch are two improvements that would allow a consistent median width and the consolidation of parking outside of the roadway.



Allowing a direct left turn lane into the PX would provide convenient access into the facility.

Washington Boulevard Realignment

(Page 2 of 3)



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I. DATE 1. COMPONENT FY 19__ MILITARY CONSTRUCTION PROJECT DATA ARMY 3. INSTALLATION AND LOCATION 4. PROJECT TITLE Fort Eustis, Newport News, Virginia Washington Boulevard Realignment 5. PROGRAM ELEMENT 6. CATEGORY CODE 7. PROJECT NUMBER 8. PROJECT COST (S000)

9. COST ESTIMATES UNIT COST ITEM U/M QUANTITY COST (\$000) 250,997.00 Supporting Facility SY 2,133 19.30 (41,167.00) Bituminous Paving 675 SY 9.27 [6.257.00) Bituminous Resurfacing SY 5,583 4.40 (24,565.00) Bituminous Pavement Removal 3,270 Concrete Curb LΡ 15.45 (50,522.00) EΑ 28 670.00 (18,760.00) Plantings - Canopy Trees 15 155.00 Ornamental Trees EA (2,325.00) 5,583 0.75 1 4-137 003 Turf Seeding SY EA 2 44.290.00 (88,580.30) Traffic Signals 2,545 5.75 Concrete Curb Removal LF (14.634.00) 250,997.00 Subtotal Contingency Percent (10.0%) 25.100.00 276,397.00 Total Contract Cost Design Fee (5.0%) 13.805.00 289,902.00 Total Supervision Insp. and Overhead (5.0%) 14,495.00 Total Request 304,397.00 Subtotal 12.550.00 Contingency Percent (5.0%)

10. DESCRIPTION OF PROPOSED CONSTRUCTION

Supervision Insp. and Overhead (5.5%)

The purpose of this project is to maintain a consistent median width south of Washington Blvd. and to consolidate all parking for community facilities outside of Washington Blvd. The southbound lanes of Washington Blvd. would be replaced with newly aligned, curbed lanes with an additional left turn lane into the PX. Additional improvements would include new street trees, roadway lighting, and two new traffic signals for both southbound and northbound traffic on Washington Blvd. Elimination of existing parking areas in the median and the selected existing roadway will necessitate reseeding of turf. Filling existing drainage ditches and drainage piping is highly recommended but not included in the project cost

Roadway realignment, the new left turn lane, and the installation of traffic signals will require the services of a traffic consultant/engineer.

Demolition will require any pavement removal for selected existing roadways and parking areas within the median.

Provisions for handicap access will be made at roadway rrovisions for nandicap access will be made at roadway intersections where nandicap access normally occurs. The project should follow all applicable design criteria for the Community Services area for roadways, lighting, landscape, and site furnishings.

11. REQUIREMENTS: N/A

Total Contract Cost

Design Fee (6.0%)

Total Request

Washington Boulevard Realignment Ft. Eustis, Newport News, Va.

Open Drainage Ditch Burial (N.I.C.) and Piping Required (N.I.C.)

263.547.00

15,813.00

279.360.00

15,365.00

294.725.00

Main Gate Improvements

(Page 1 of 4)

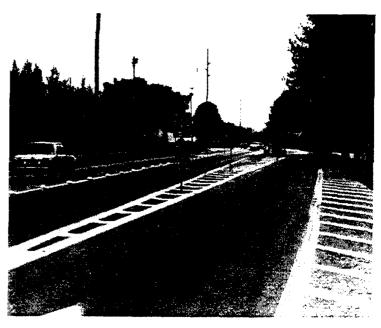
The main gate on Washington Blvd. is approached by a scenic forest-edged roadway divided by a planted median. Though the potential for an organized entrance is there, there are some buildings, crossing roadways, and parking areas that detract from the sense of progression from the approach to the gatehouse into the post. To provide a clear sequence into the post the following recommendations include:

- Preserving the existing forest edge on both sides of Washington Boulevard.
- New guardhouse (N.I.C.).
- New curbed island with ornamental plantings at gatehouse.
- New roadway and accent lighting.
- Eliminating and relocating a roadway inside the gatehouse approach.
- Screening the parking area for the bus station, providing a wider pavement setback.
- Providing a new parking lot adjacent to the gatehouse with new directory, eliminating a parking lot farther away.
- New post identification sign, removing existing sign in median.

A traffic consultant should be used for relocating any roads off of Washington Blvd. Follow all applicable design criteria for gateways within the Installation Design Guide.



A new sentry gatehouse with an attractive curbed island around it with ornamental plantings would improve the appearance of the gateway entrance.



A cobblestone divider strip would effectively separate traffic lanes safely and attractively.

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Screen the bus station parking area with additional evergreen plantings.



A pull-off parking area with conveniently located directory signage and new lighting and landscaping would be an asset to the gateway.

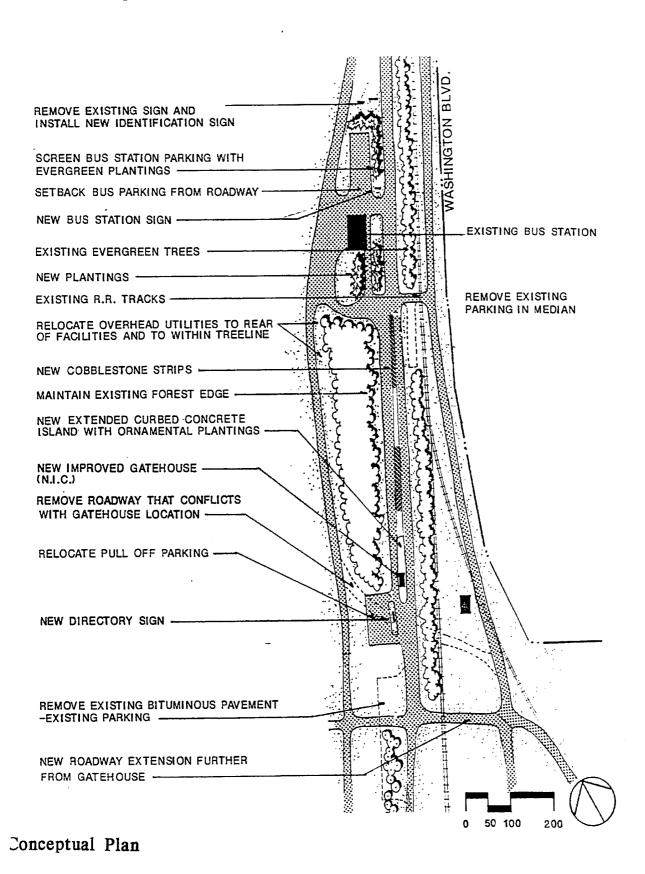
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Main Gate Improvements

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1. COMPONENT FY 19__MILITARY CONSTRUCTION PROJECT DATA ARMY 3. INSTALLATION AND LOCATION 4. PROJECT TITLE Fort Eustis, Newport News, Virginia Main Gate Improvements 6. CATEGORY CODE 7. PROJECT NUMBER B. PROJECT COST (\$000) 5. PROGRAM ELEMENT 9. COST ESTIMATES UNIT ITEM U/M QUANTITY COST (00002) 122,350.36 SY (16,733.08) Bituminous Paving SF 1,200 7.20 Concrete Paving (Gatehouse Island) (8,640.00) 1.9 700 15.45 (10.815.00) SY 1,440 9.27 (13,349.00) Bituminous Resutfacing Bituminous Paving Removal SY 2,998 4.40 (13,190.00) SY. 33 9.80 324.001 L? 5.75 (468.00) Concrete Curb Removal Cobblestone Divider Strip SF 2,000 15.45 (30,900.00) LF 1,180 3.80 Paint Striping (944.00) £A 2,000.00 (8,000.00) Packing/Roadway Lighting Bollards (Steel Pipe) EA 2 75.00 (150.00) Eλ 21 670.00 (14,070.00) Plantings - Shade Trees 25 165.00 (4,125.00) Evergreen Trees 867 (650.00) SY 0.75 Turf Seeding Subtotal 122,350.00 Contingency Percent (5.0%) 6,117.00 128,467.00 Design Fee (6.0%) 7,708.00 136,175.00 Total Supervision Insp. and Overhead (7.5%) 10,213.00 Total Request 146,388.00

10. DESCRIPTION OF PROPOSED CONSTRUCTION

The project goals are to improve the appearance of the entry garehouse, the Coadway approach to the entrance, parking areas, landscaping, and the perimeter of the adjacent bus station. Improvements include a new curted island around the gatehouse, new guardhouse (N.I.C.) relocation a crossroad near the gatehouse, new parking lot adjacent to the garehouse, new post identification and oriectory signage, new parking lot and accent lighting, and landscaping for ornamental and screening purposes. Also included is a new comblestone strip to separate incoming traffic to the garehouse.

A traffic consultant is included in budget costs for relocating any crossroads across Washington Boulevard.

Demoistion would include selected pavement renoval in medians, and crossroads and parking lots to be relocated. Also included would be the removal of the existing post identification sign in the median of the curred approach to the entrance. Handicap parking would be provided in the new parking lots.

Follow all applicable design criteria in the Installation Design Guide for the Gateway Visual Zone.

11. REQUIREMENTS: N/A

ROJECT:

Main Gate Improvements Fort Eustis, Newport News, Virginia